FOUNDED IN 1856

RAILWAY AGE

AUGUST 13, 1949

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MAKING TIME...SAVING MONEY

The Terminal Railroad Association of St. Louis reports that General Motors Diesel switchers save $3.71 an hour per unit over the cost of operating and maintaining the steam engines they replaced. Estimated annual saving per locomotive, $22,750 —enough to pay for a new 1000 H.P., 125-ton General Motors Diesel switcher in less than 4½ years at today's price. Since 1940 when the first of a fleet of 21 was installed, the *faster, more reliable* service of these Diesels has materially shortened the elapsed time goods are in transit between producer and consumer — an essential factor in the Terminal's continuing program of improved service to shippers.

General Motors Diesel 1000 H.P., 125-ton switcher pulling freight under the famous Eads Bridge.

ELECTRO-MOTIVE
DIVISION OF GENERAL MOTORS • LA GRANGE, ILL.

GENERAL MOTORS LOCOMOTIVES

Home of the Diesel Locomotive

IMMEDIATE . . .

SAVINGS WITH Chilled Car Wheels

- Immediate and substantial savings in wheel investment.
- Immediate reduction in replacement and wheel shop costs.
- Immediate delivery from 26 strategically located member plants—reducing inventory requirements.
- Improved design—assuring greater safety, strength and durability.

★ ★ ★

Details of these economies can be obtained from any member of the Association of Manufacturers of Chilled Car Wheels.

Remember—Over 65% of the nation's railroad freight is carried on Chilled Car Wheels.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

445 NORTH SACRAMENTO BOULEVARD, CHICAGO 12, ILL.

American Car & Foundry Co. • Canadian Car & Foundry Co. • Griffin Wheel Co.
Marshall Car Wheel & Foundry Co. • New York Car Wheel Co. • Pullman-Standard Car Mfg. Co.
Southern Wheel (American Brake Shoe Co.)

7674

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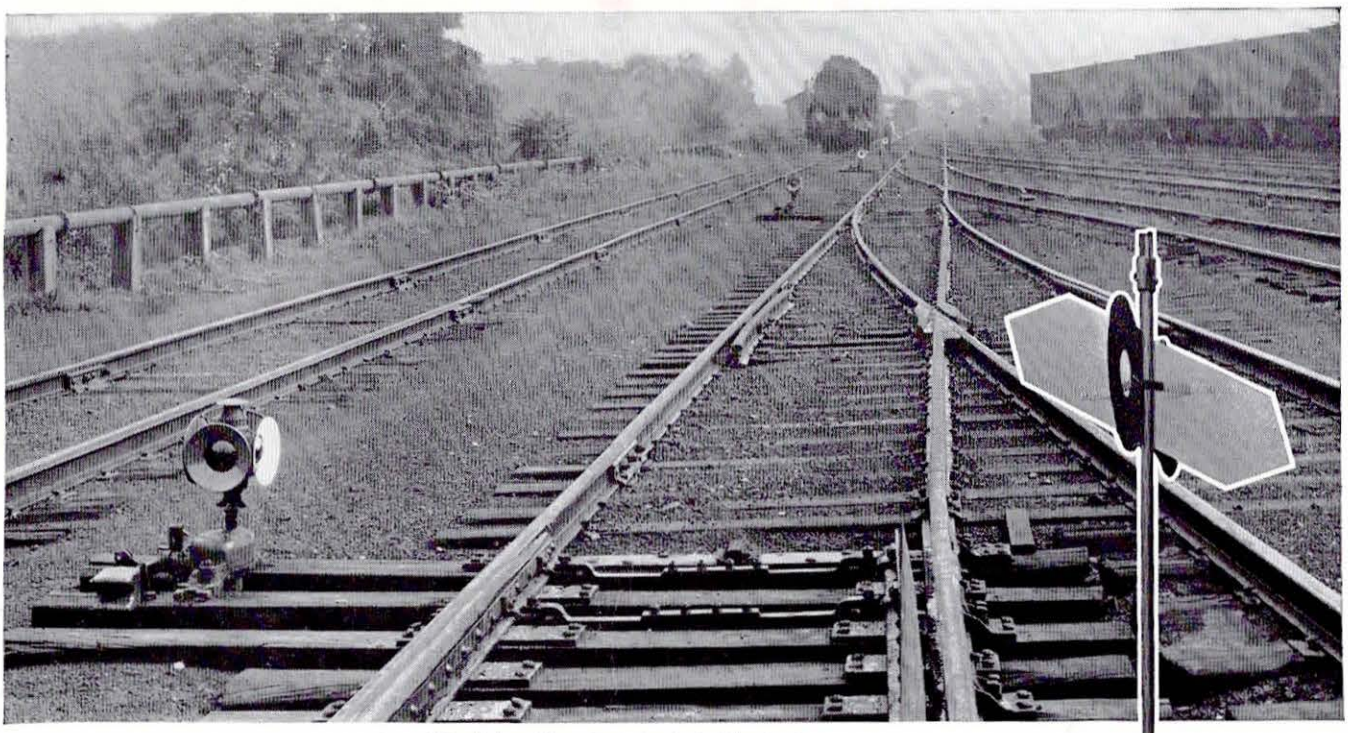
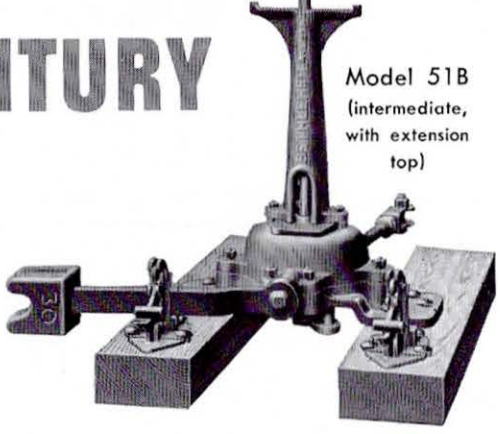


A string of Bethlehem New Centuries in ladder track.

A Great Name in Switch Stands

BETHLEHEM NEW CENTURY



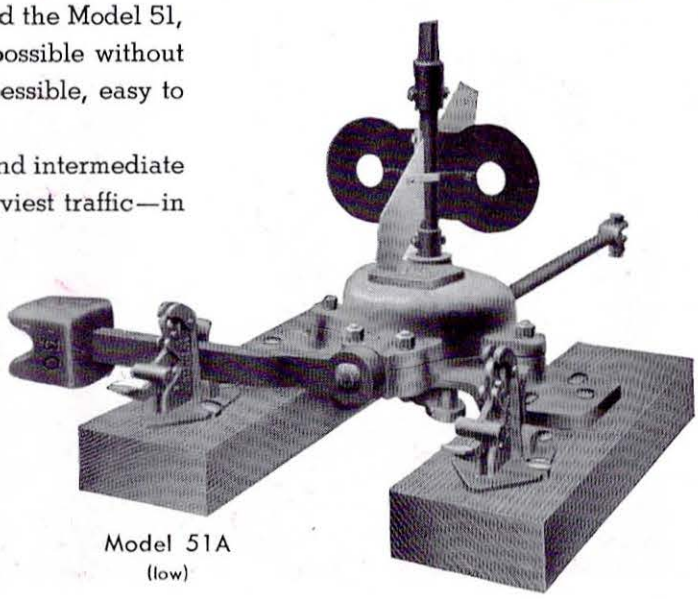
Model 51B
(intermediate, with extension top)

It's a name well known to railroad men for fifty years or more—and today's New Century, best of a long line, continues the family tradition of complete dependability.

One reason is its sturdiness; its rugged, carefully-engineered parts. Another is its basic simplicity . . . there is little about it that can get out of order.

A parallel-throw stand, the New Century is easy to operate. It is made in two designs: the non-adjustable Model 50, and the Model 51, equipped with internal shims that make adjustment possible without disconnecting the stand. These shims are readily accessible, easy to handle; changes in setting can be made in a jiffy.

Bethlehem's New Century is available in both low and intermediate types. Use it with 60-lb rail and over at points of heaviest traffic—in main lines, branch lines, and yards.



Model 51A
(low)

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
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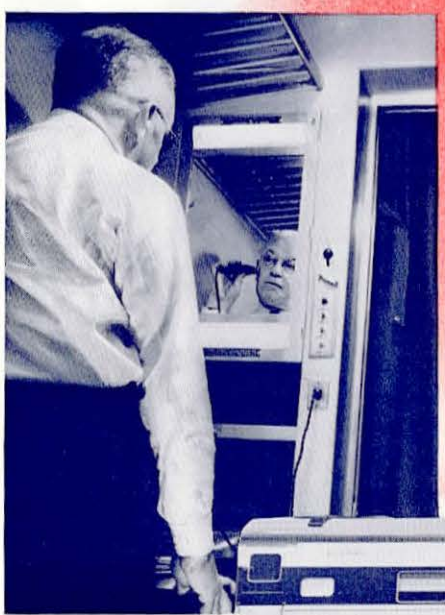
★ BETHLEHEM STEEL ★

The latest on the Lac



9 new A.C.F.-built sleepers—each with 6 Double Bedrooms and 10 Roomettes. Exemplifying the most modern in Rail decor, new DL&W Roomettes, as well as Bedrooms, are equipped with complete facilities; individual control of heating and cooling.

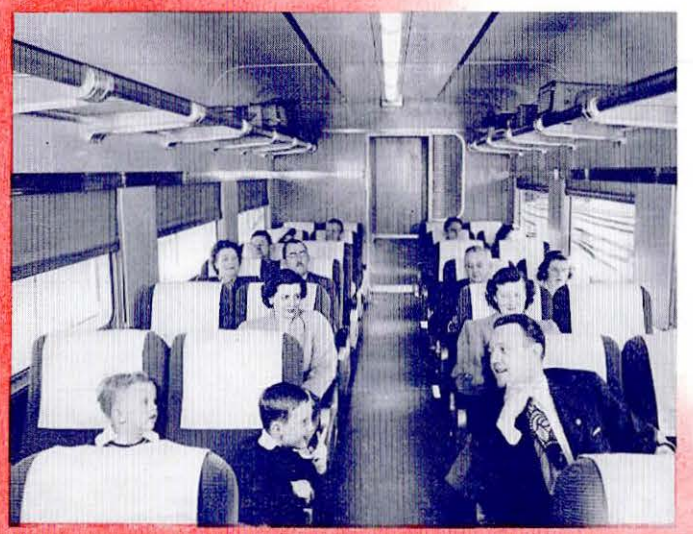
Double Bedrooms may be sold in pairs! Folding partition between bedrooms provides for added space when the demand arises. Beds in alternate accommodations are either longitudinal or across the car. A folding chair, in longitudinal bedroom, is stored under lower bed during the night.

kawanna

THE ROUTE OF PHOEBE SNOW

Lackawanna

Advanced travel luxury keynotes new a.c.f.-built Sleepers and Coaches—now bidding for new passenger business along the route of the Phoebe Snow and other DL&W principal trains from New York to Buffalo and Chicago!



15 new a.c.f.-built coaches—extra spacious without over-sacrificing revenue capacity. From the spring-filled backs of the double-rotating reclining seats, to the additional luxury of running ice water, no feature that bears on traveller comfort has been neglected.

a.c.f.

CAR BUILDERS TO AMERICA'S RAILROADS

AMERICAN CAR AND FOUNDRY COMPANY, NEW YORK • CHICAGO • ST. LOUIS
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OBEDIENT to the LIGHTEST TOUCH!

. . . THE NP

Photo courtesy of Pennsylvania R. R.

Automatic End Door Operator

• So sensitive that it responds safely and surely even to the command of a four year old, the NP Automatic End Door Operator fascinates passengers of all ages with its magical convenience.

A touch of the latch bar from outside — or a slight pull of the handle from inside — and the end door swings open, then closes gently after the passenger has gone by. Completely safe and reliable, the door can be controlled by the passenger during all phases of its operating cycle; when not in operation, it is held firmly closed.

The NP Automatic End Door Operator travels in the best of company, for you'll find it on leading trains of over twenty of the nation's foremost railroads — on new or remodeled coaches, with swinging or sliding doors. Of simple design and rugged construction, the Automatic End Door Operator reflects all the engineering experience gained by National Pneumatic in nearly fifty years of leadership in the manufacture of Door Control and Safety Equipment.

Write today for Publication No. 1063 — it tells the complete story.

NP

NATIONAL PNEUMATIC COMPANY

Graybar Bldg., New York **McCormick Bldg., Chicago** **Rahway, New Jersey**

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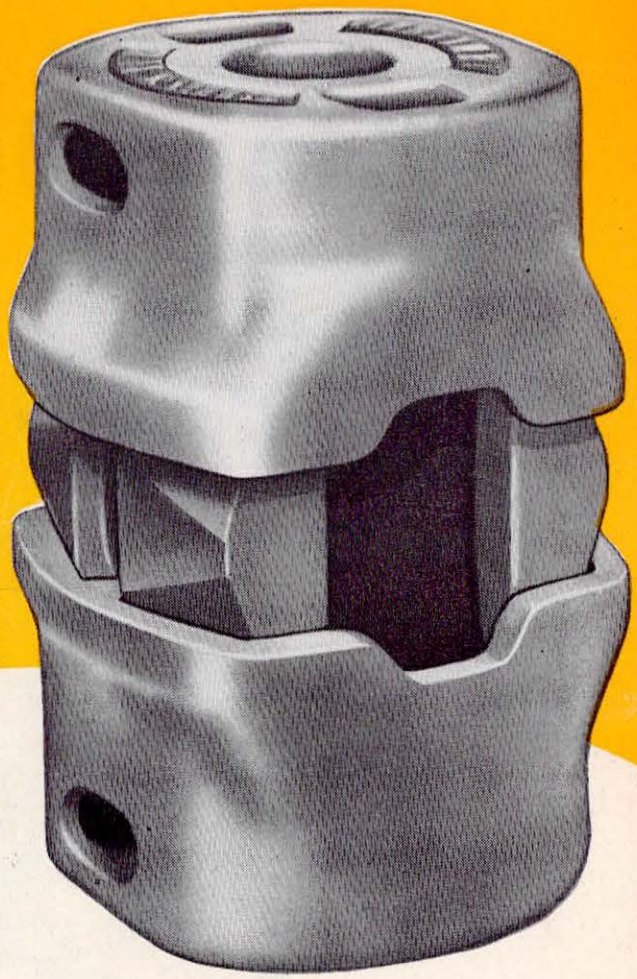
7169

WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL EQUIPMENT

SIMPLEX *unit-type* SNUBBERS



For the *best riding qualities*
you can get from an AAR Coil Spring Grouping,
ask your A.S.F. Representative about *long-lived* Simplex Snubbers.
They cushion the lateral and vertical shocks,
whether cars are light or loaded.
Comparative tests have proved them FIRST in smooth, effective performance.

AMERICAN STEEL FOUNDRIES

MINT MARK OF ⬡ FINE CAST STEEL

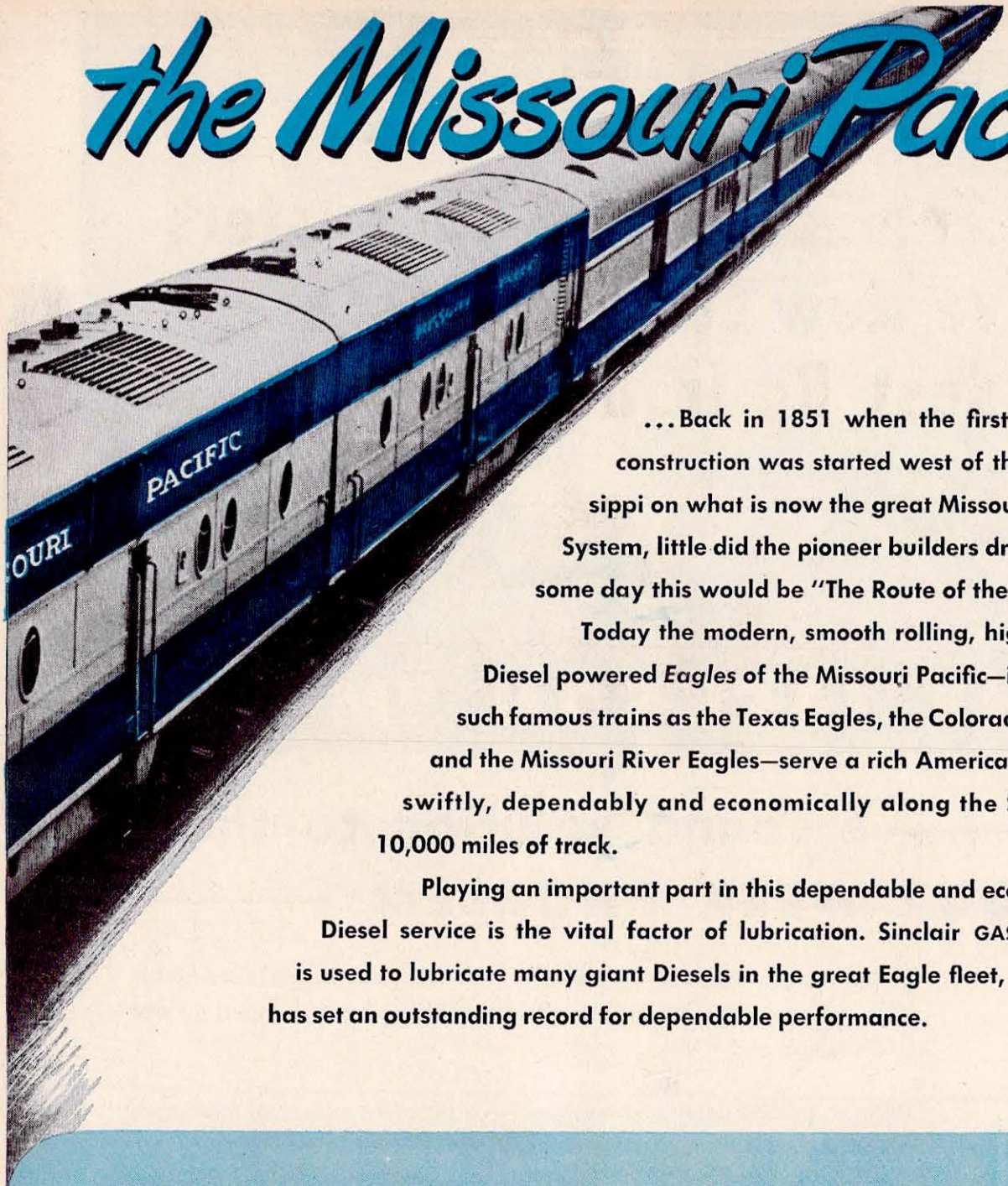
Visit the Chicago Railroad Fair

The EAGLES FLY on

...Famous Diesel Speedsters Give New Look to West's Oldest Railroad...

MISSOURI PACIFIC LINES

the Missouri Pacific



...Back in 1851 when the first railroad construction was started west of the Mississippi on what is now the great Missouri Pacific System, little did the pioneer builders dream that some day this would be "The Route of the *Eagles*." Today the modern, smooth rolling, high speed Diesel powered *Eagles* of the Missouri Pacific—including such famous trains as the Texas Eagles, the Colorado Eagles and the Missouri River Eagles—serve a rich American empire swiftly, dependably and economically along the System's 10,000 miles of track.

Playing an important part in this dependable and economical Diesel service is the vital factor of lubrication. Sinclair GASCON OIL is used to lubricate many giant Diesels in the great Eagle fleet, where it has set an outstanding record for dependable performance.

SINCLAIR GASCON *Symbol of Dependability*

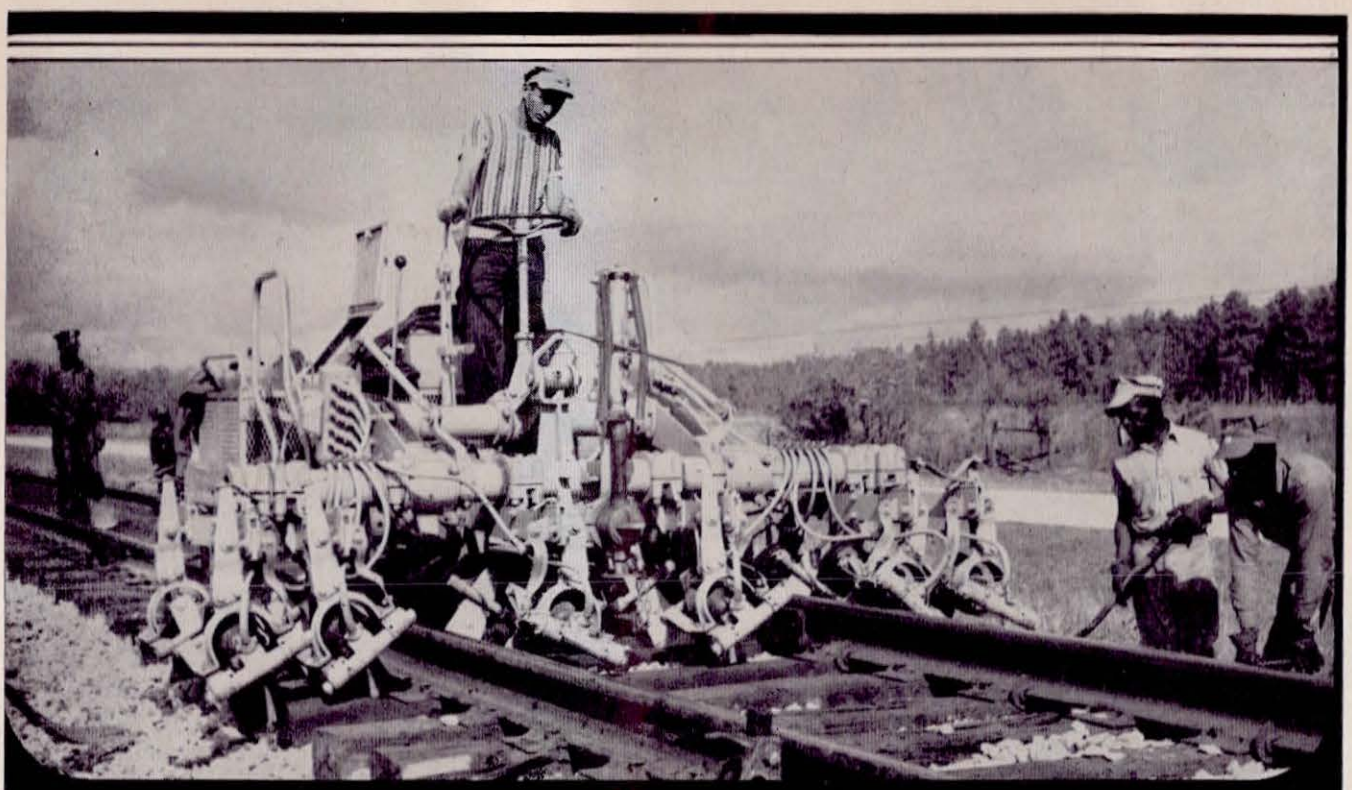
Sinclair GASCON DIESEL lubricating oils have achieved the stamp of approval from more than 50 U.S. railroads. Their service record, in the locomotives pulling heavy freights, as well as many of the celebrated streamlined trains of today, is outstanding.

Inherent in all GASCON OILS is their solvent action, which promotes clean engine operation, and their wear prevention qualities that hold down expensive replacement and maintenance costs.

SINCLAIR

RAILROAD LUBRICANTS

SINCLAIR REFINING COMPANY, RAILWAY SALES · NEW YORK · CHICAGO · ST. LOUIS · HOUSTON



THE JACKSON "M-T"

——— a sound solution to the 40-HOUR-WEEK PROBLEM: ———

If higher pay rates and the 40 hour week appear to make adequate ballasting operations impossible within the limits of your budget, do one of two things:

1. Call in a Jackson consulting engineer — a practical individual thoroughly trained in maintenance methods and practice and one who talks your language. He can answer all your questions in short order and explain how the Jackson "M-T", operating under the conditions obtaining on your particular road, can help you to a sound solution of your problem. Or . . .

2. If you would rather simply study a Jackson "M-T" in actual operation, write for nearest location.

Prompt deliveries can be made to those who wish to capitalize on the tremendous advantages of this machine during the rest of the season. Write, wire or phone us, Now!

ELECTRIC TAMPER & EQUIPMENT CO. Ludington, Michigan

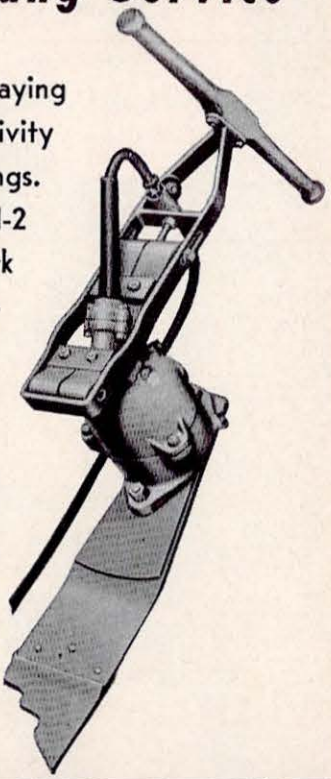
THE JACKSON 4-TAMPER OUTFIT

SECTION GANG PRODUCTION BOOSTER

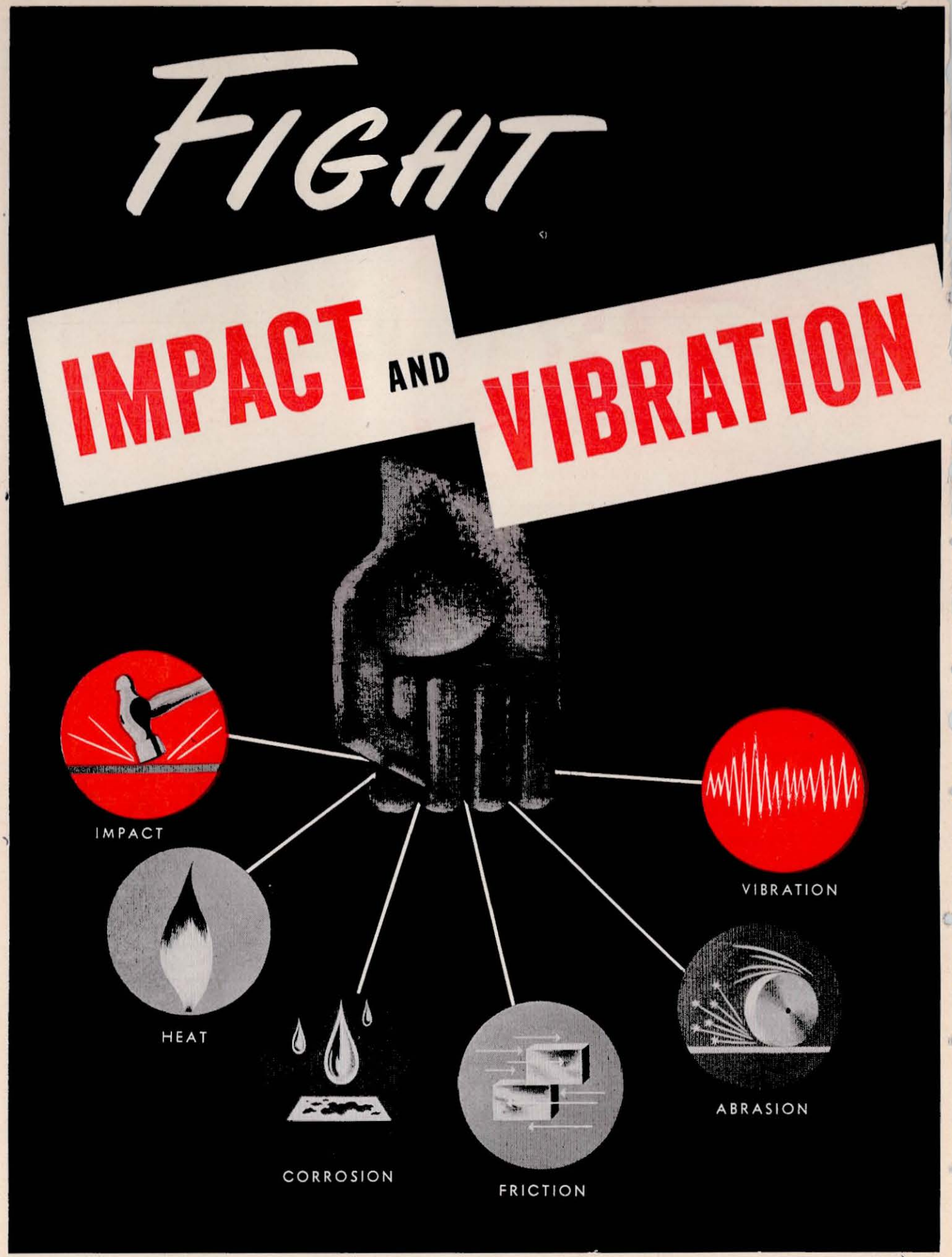
Finest of Unit Tampers for Extra Gang Service

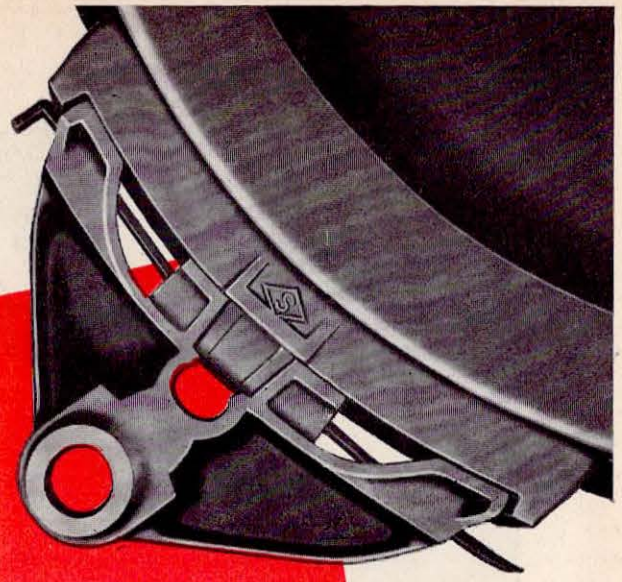
In your search for rock-bottom maintenance costs, necessitating staying within the 40-hour week, don't overlook the great boost in productivity Jackson standard tampers and power plants can give to your section gangs.

Equipped with 4 Jackson standard tampers and our Model M-2 Power Plant, a section gang will turn out a whale of a lot more work and better work than can be done by hand or with any other hand-guided mechanical tampers. For spot tamping, skeletonizing and such out-of-face surfacing as is usually done by the average section gang, the Jackson 4-Tamper outfit is truly ideal. Moreover, whenever desired these outfits can be grouped in extra gang service for a general lift or major ballast insertion — with results that are surpassed only by the multiple tamper. Get the complete facts. Write, wire or phone us, NOW!



ELECTRIC TAMPER & EQUIPMENT CO. Ludington, Michigan


FIGHT
IMPACT AND VIBRATION
IMPACT
HEAT
CORROSION
FRICTION
VIBRATION
ABRASION



WITH Better Brake Shoes

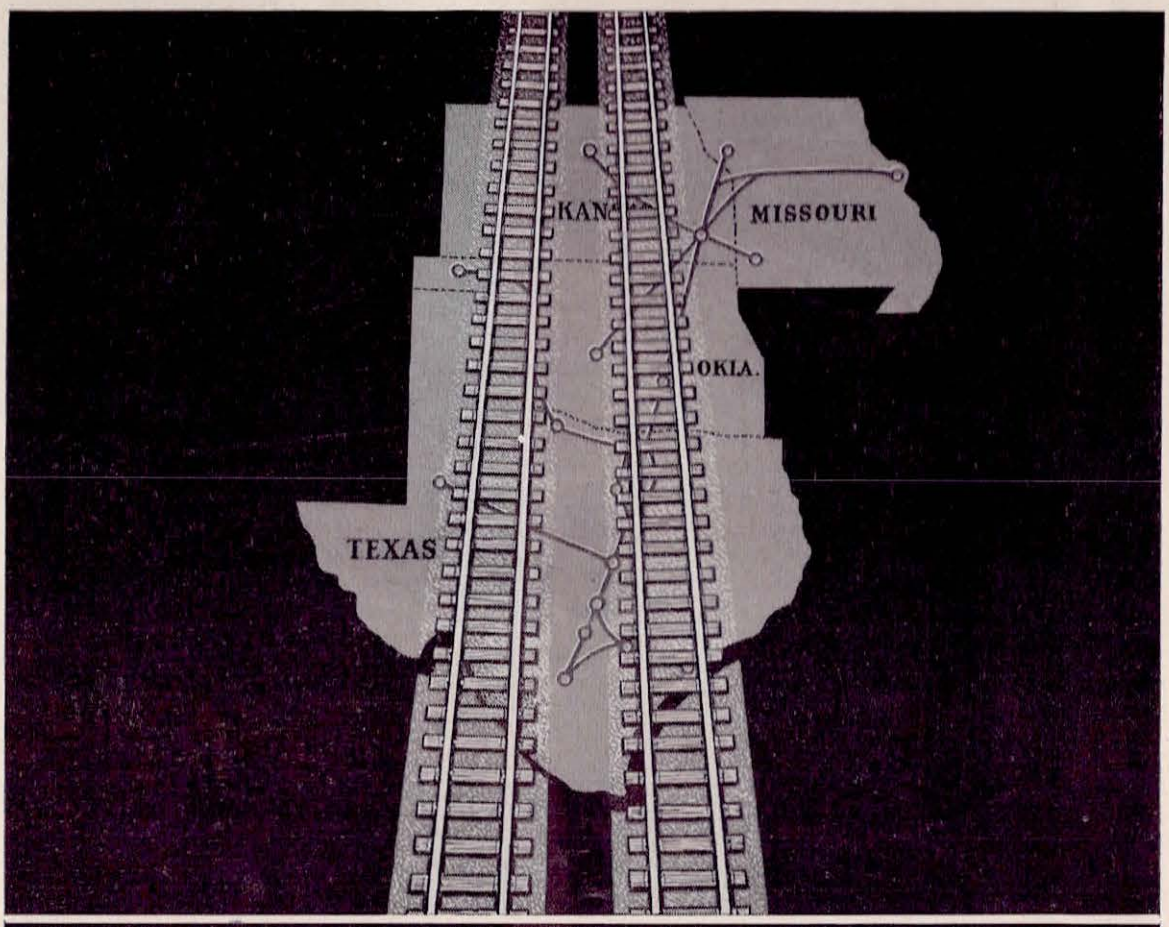
In the laboratories of American Brake Shoe Company "know-why" ranks equally important with "know-how." Our development of the new DUPLANE STEEL BACK is one more instance of continuing research that has produced outstanding advances in brake shoe design—brake shoe backs that successfully resist the destructive effects of impact and vibration.

Out of our laboratories come brake shoes and castings that serve better and more efficiently under the stepped-up demands of today's exacting service. American Brake Shoe Company, 230 Park Ave., New York 17, N. Y.

AMERICAN Brake Shoe COMPANY

BRAKE SHOE AND CASTINGS DIVISION

7639



You're on the right track when you ship *Katy*

Five crack Katy freights, operating on stepped-up daily schedules, provide dependable, on-time service between Texas and Oklahoma and the North, with extensive connecting service at terminals.

Smooth-hauling new road and yard Diesels, new cars and new rail . . . new automatic signals . . . the swift magic of radio, on-line and at terminals . . . service PLUS to you. Broader facilities, in rolling stock, yards and terminals, with one idea in mind: SAFER, BETTER FREIGHT SERVICE for You!

End-to-End Radio Communication means safer, speedier handling of freight, in all kinds of weather.

Automatic Block Signals precision-control the movements of Katy's freight fleet to suit your every shipping need.

Modern Freight Terminals combine human skill and mechanical facilities to process your freight with maximum safety and efficiency.

the **Katy**

M·K·T
KATY RAILROAD
MISSOURI-KANSAS-TEXAS

NATURAL ROUTE SOUTHWEST

310

the one bookkeeping machine for railroads designed to speed and save on your payrolls...

and here's why... The alert executive today is most conscious of reducing all costs, and this new Remington Rand machine has been geared to eliminate administrative waste-holes. It produces all the accounting records needed by railroads more efficiently and more economically than ever before. Here is how:

Faster results... every feature of this bookkeeping machine has been electrified. Balances are computed and printed automatically, and improved tabulation and high-speed timing eliminate operator-strain—increase operator-worktime.

Simpler operation... two, three or more related records—every form you need for payrolls, freight claim accounting, or any other application—are produced simultaneously—records for every breakdown, for every necessary department. New "snap-on" registers give extra flexibility...they're easily repositioned for any new application.

New functional design... many new, special features guarantee operator-owner appeal. This streamlined beauty has new organ type, finger-grooved keys—and uniform impressions are assured. The writing line is completely visible, and register totals are magnified for even easier reading. Yes, in every way this new machine is designed to speed and save in your accounting.

But see for yourself. Call your nearby Remington Rand representative, or write for free booklet, "Fashioned for Business Administration." Remington Rand Inc., Dept. RA-7, 315 Fourth Ave., New York 10, N. Y.

the Foremost
Remington Rand
BOOKKEEPING MACHINE

"...BUT I GO ON FOREVER"

After twelve years of service and four and a half million miles of high speed operation apiece, the two Denver Zephyrs were shopped by the Burlington for their first major overhaul in December, 1948.

Because of a decision to install an improved type of insulation, the sides of the cars were stripped down to their structural members.

An engineer, inspecting them, commented: "These cars approach what has always been considered an engineering impossibility—a permanent structure."

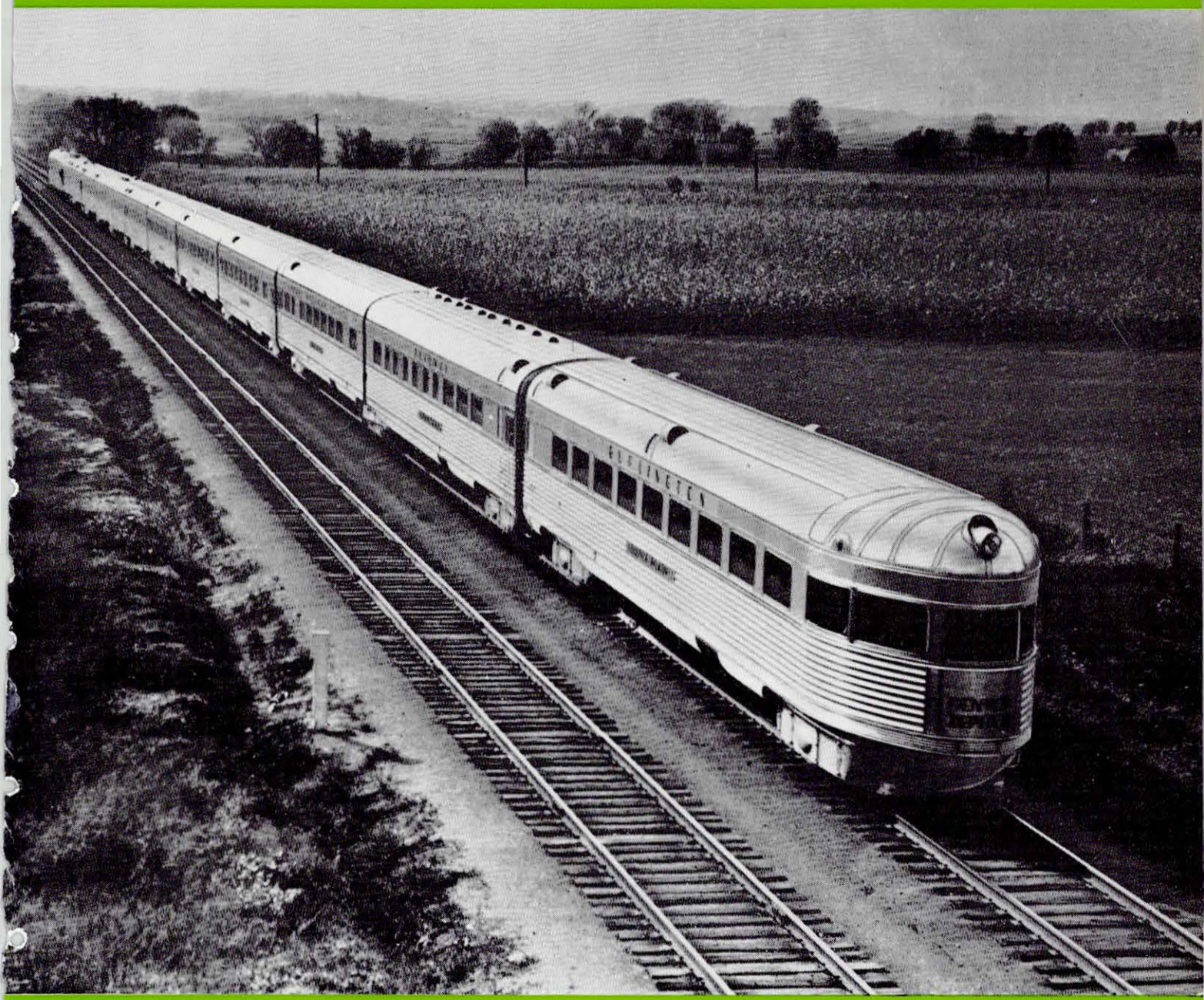
The coaches were overhauled in the Burlington's own shop in Aurora, where the workmen were quite calm about it all. They were accustomed to the miracle of stainless steel.

But in the shops where the sleepers were overhauled, the men were bug-eyed. The all-too-familiar rust and scale, eaten-through sheets and crumbling joints were completely absent.

The trains are back in service, now, as good as the day they were built . . . service-wise better, thanks to the incorporation of improvements developed since they were delivered to the Burlington in 1936.

But wiping rags and polishers did the job which would have been assigned, years sooner, to cutting flames and chisels on ordinary construction. The Denver Zephyrs have completely answered any questions about the superior value of stainless steel construction. *No Budd car has ever worn out.* The Budd Company, Philadelphia 32, Pa.

DENVER

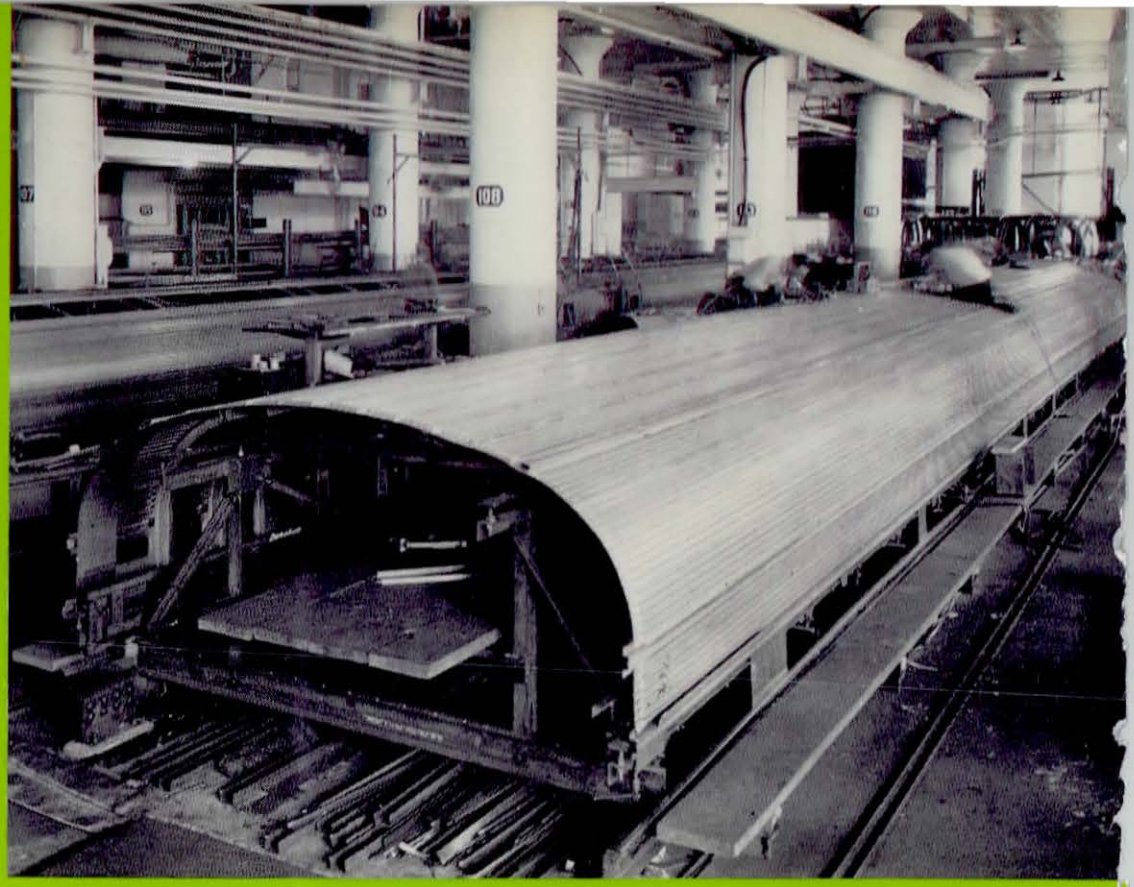


Denver Zephyr, photographed on November 5th, 1936 as it entered the service of the Burlington between Chicago and Denver on a schedule calling for an average of sixty-five miles an hour.

ZEPHYR

May, 1936

Constructing the roof of one of the Denver Zephyr's cars.



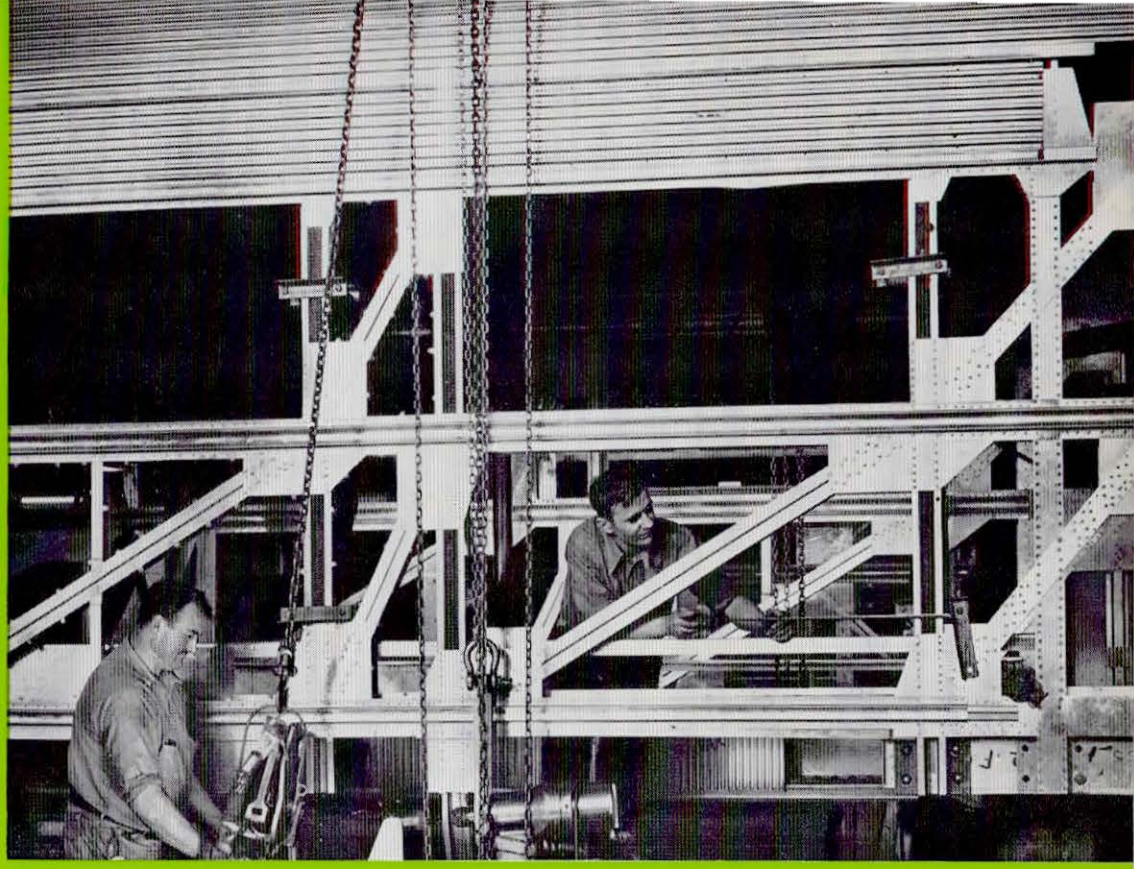
4,500,000 miles later

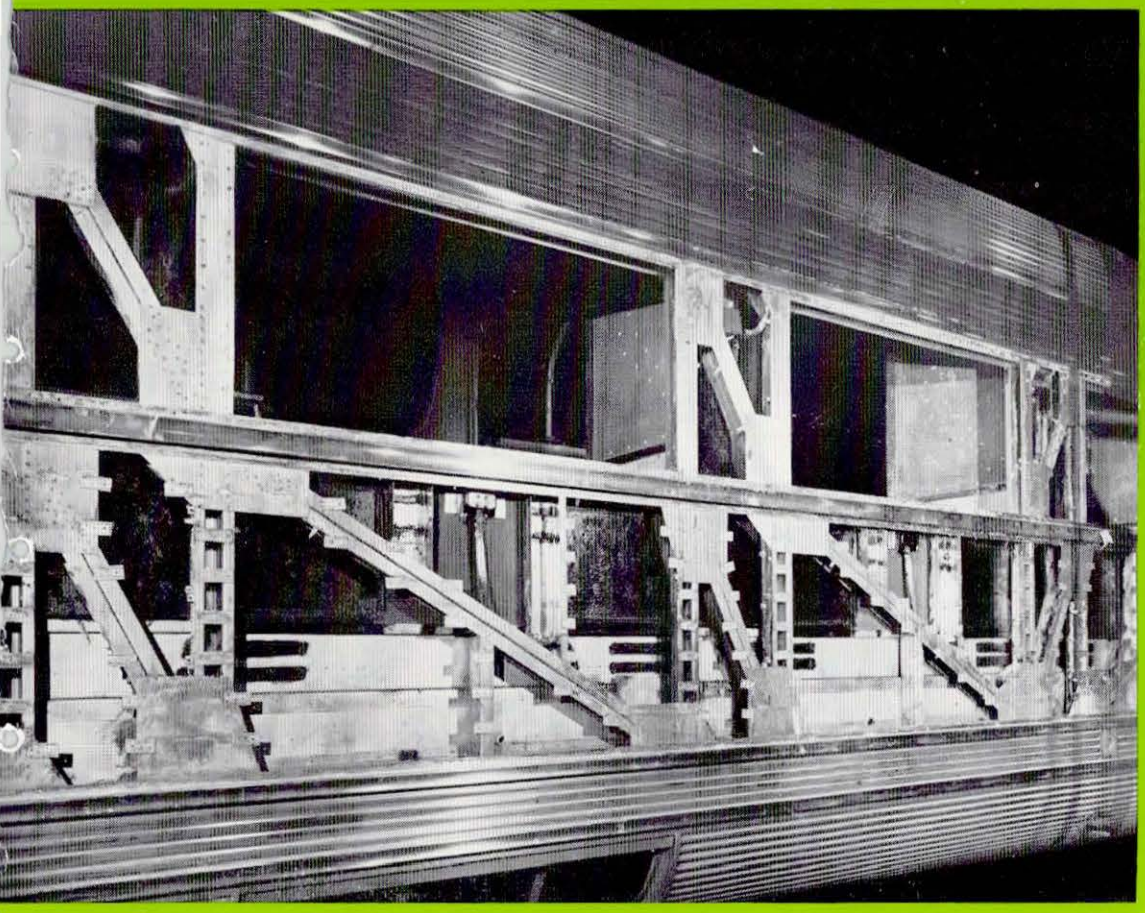
Unretouched photo of Denver Zephyr roof, taken in the Burlington's Aurora shops.

DENVER ZEPHYR

May, 1936

Constructing the Denver Zephyrs by the Budd-invented Shotweld system.





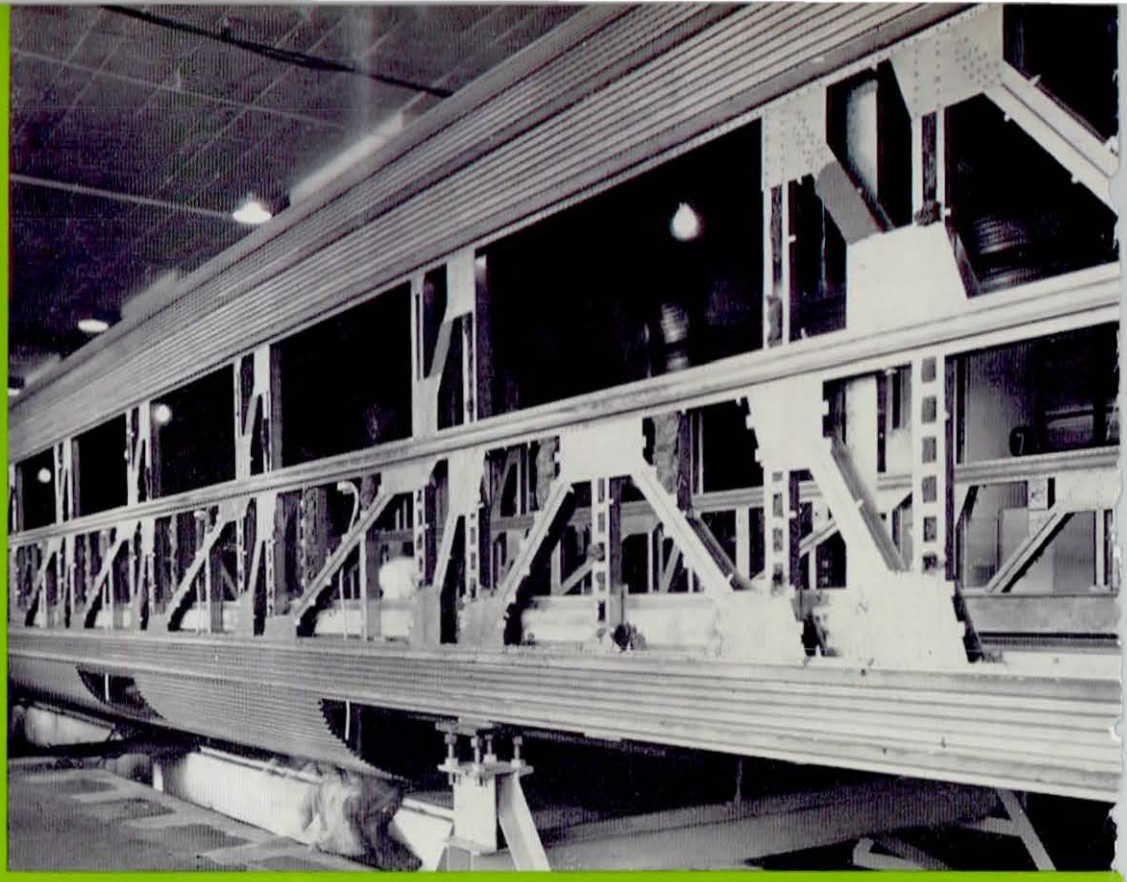
4,500,000 miles later

Every weld still perfect. Photo unretouched.

DENVER ZEPHYR

May, 1936

Side-frame of a Denver Zephyr car under construction.



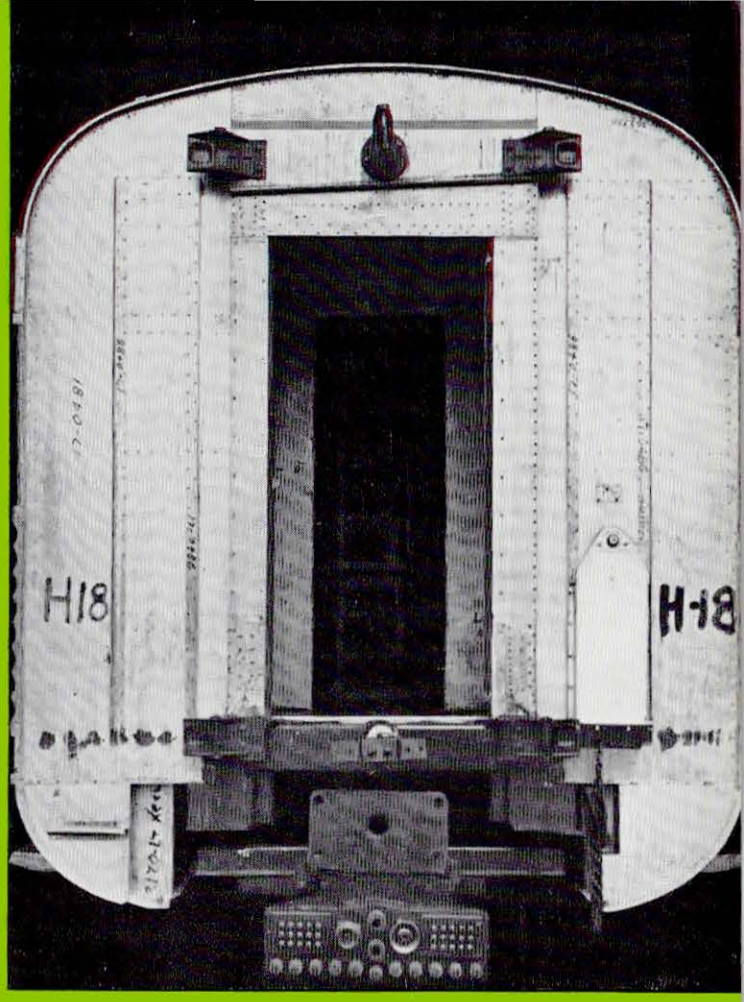
4,500,000 miles later

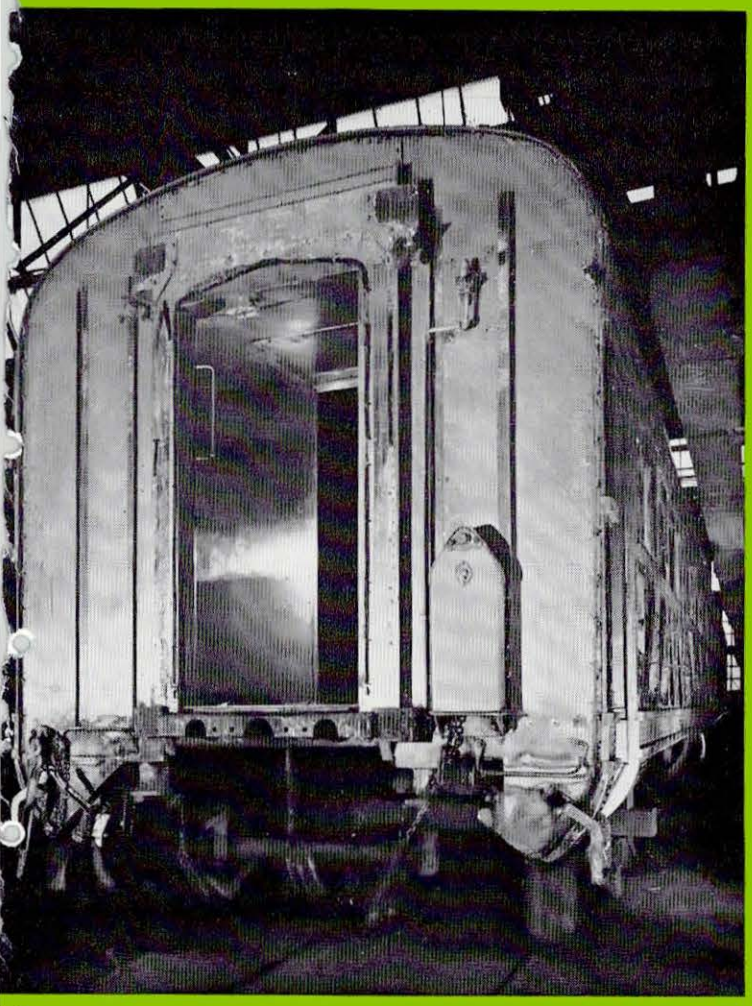
Unretouched photo of Denver Zephyr side-frame taken during the overhaul.

DENVER ZEPHYR

May, 1936

End-section of Denver Zephyr car under construction.

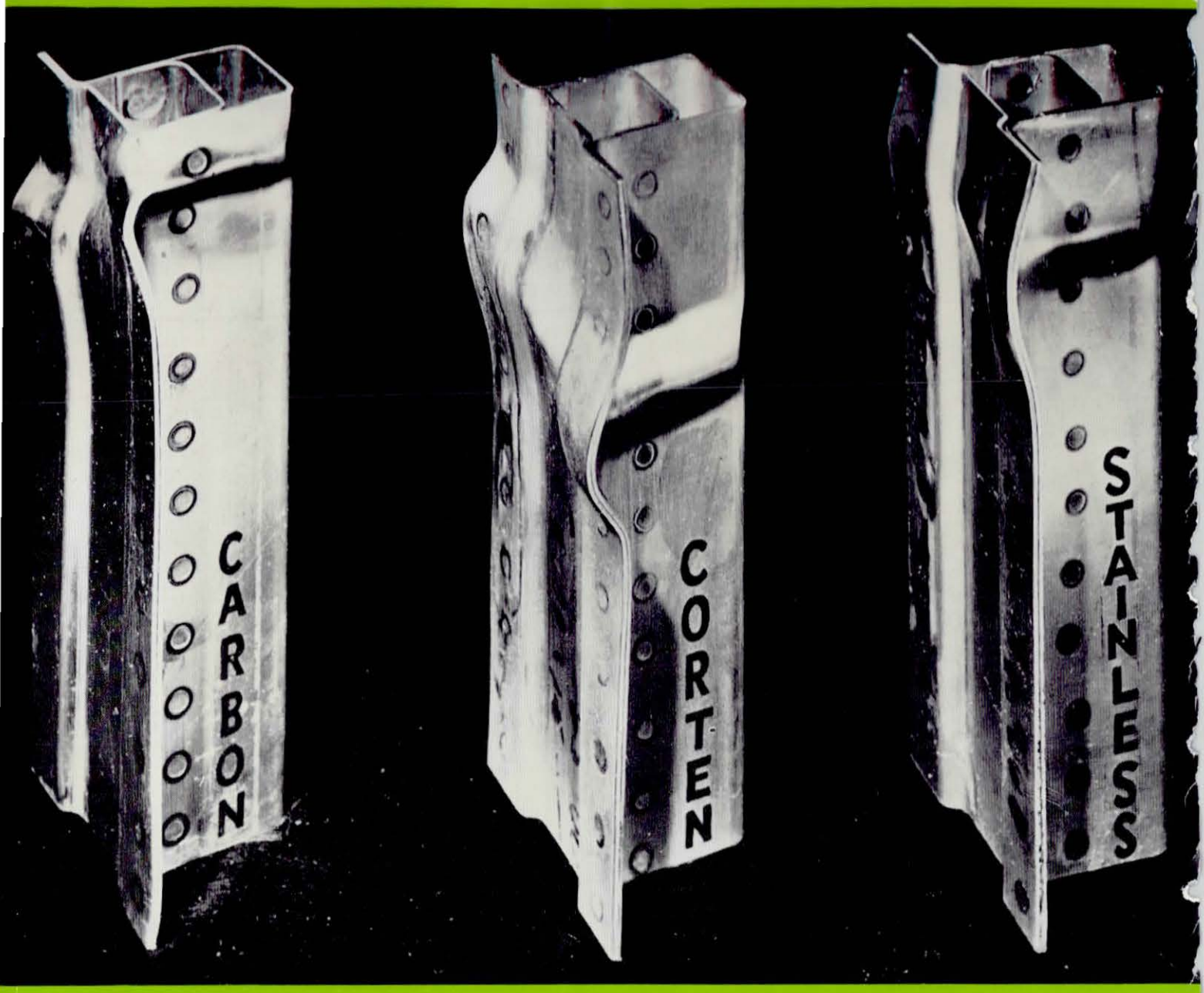




4,500,000 miles later

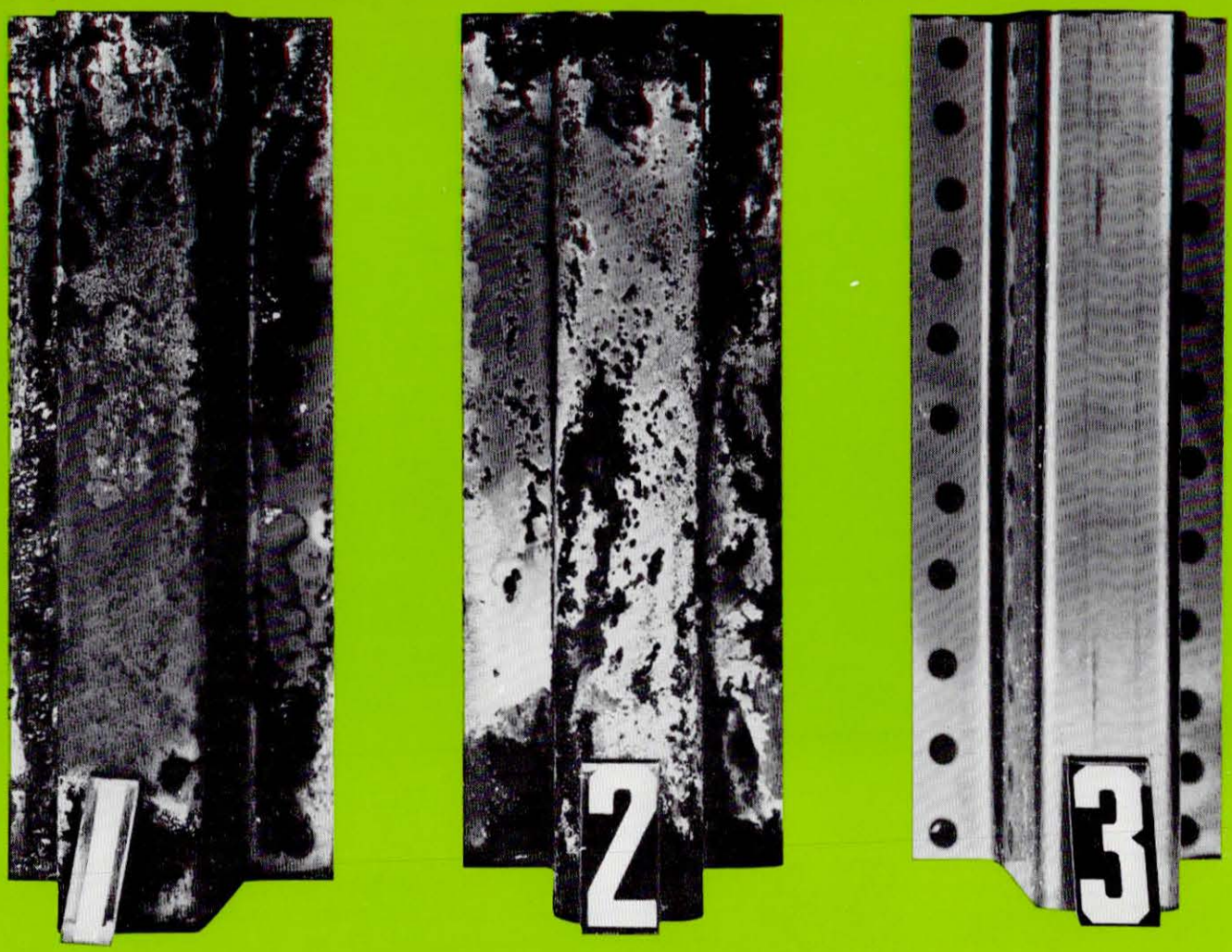
Unretouched photo of Denver Zephyr end-section taken during the overhaul.

DENVER ZEPHYR

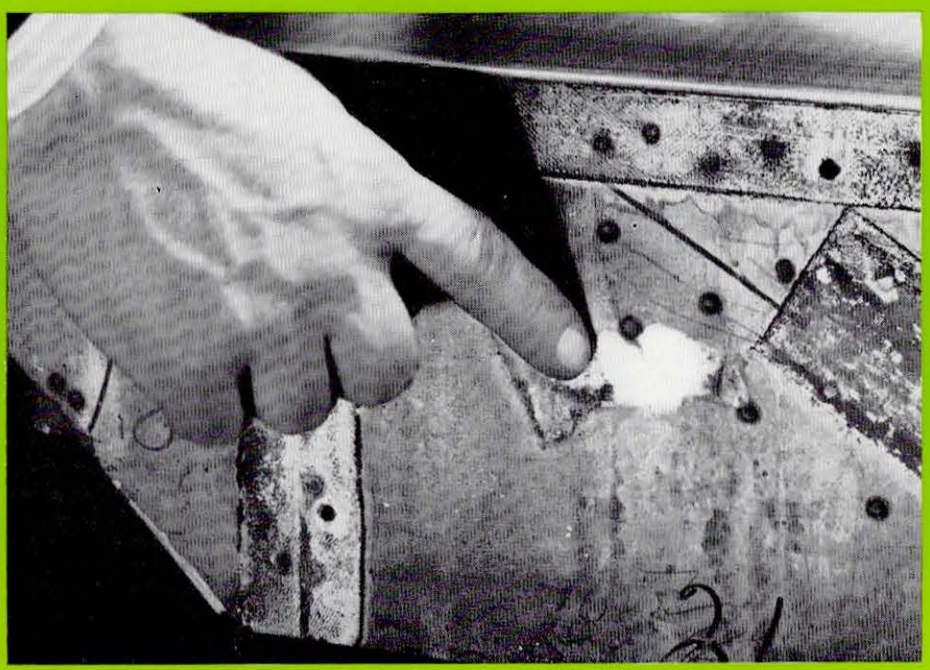


The tremendous strength *of the stainless steel used in constructing the Denver Zephyrs is demonstrated by this compression test. These three sections of steel are of identical weight (plus or minus one ounce) and contour. Placed under compression to the point of failure, the following results were obtained:*

	Failure point in pounds	Residual Strength in pounds
Carbon Steel	**26,000**	**13,000**
Corten	**33,500**	**15,000**
Stainless Steel	**64,000**	**41,000**



(**1**) *Carbon steel,* (**2**) *Corten and* (**3**) *Stainless steel, after identical exposure to corrosive conditions.*



4,500,000 miles later

A rub of the finger . . . and again mirror bright.

Burlington Lines

Chicago, Burlington & Quincy Railroad Company
The Colorado and Southern Railway Company
Fort Worth and Denver City Railway Company
The Wichita Valley Railway Company

OPERATING Burlington Route DEPARTMENT

H. Urbach,
Gen'l. Supt. Motive Power
and Machinery

547 West Jackson Boulevard
Chicago 6, Illinois

January 15, 1949

412.043

The Budd Company,
Red Lion Plant,
Philadelphia, Pa.

Gentlemen:

A visitor to our shops in Aurora during the overhaul of the Denver Zephyrs asked whether what we had found about the trains' condition would lead us to extend the interval between overhauls.

The question caught us a little by surprise, for the trains had already exceeded any normal overhaul schedule by such a wide margin as to be unique.

This was their first major overhaul since they went into operation in November 1936. Perhaps a more accurate measurement of their service is found in the fact that each has traveled more than four and a half million miles - equivalent of more than forty years of average railway car use.

I doubt if any vehicle of any kind ever went so far without such an overhaul.

As you know, we stripped portions of the cars right down to the basic structure, for thorough inspection. There was no way of telling it from new construction. What we found was gratifying confirmation of the soundness of our decision to use stainless steel.

Naturally we are making minor modifications to incorporate improvements developed since they were built. These, together with new decorations and upholstery, will put the Denver Zephyrs back in service just as modern trains of today as they were the first day they started operation. We will have two new trains at a fraction of the cost we would have to pay for new equipment.

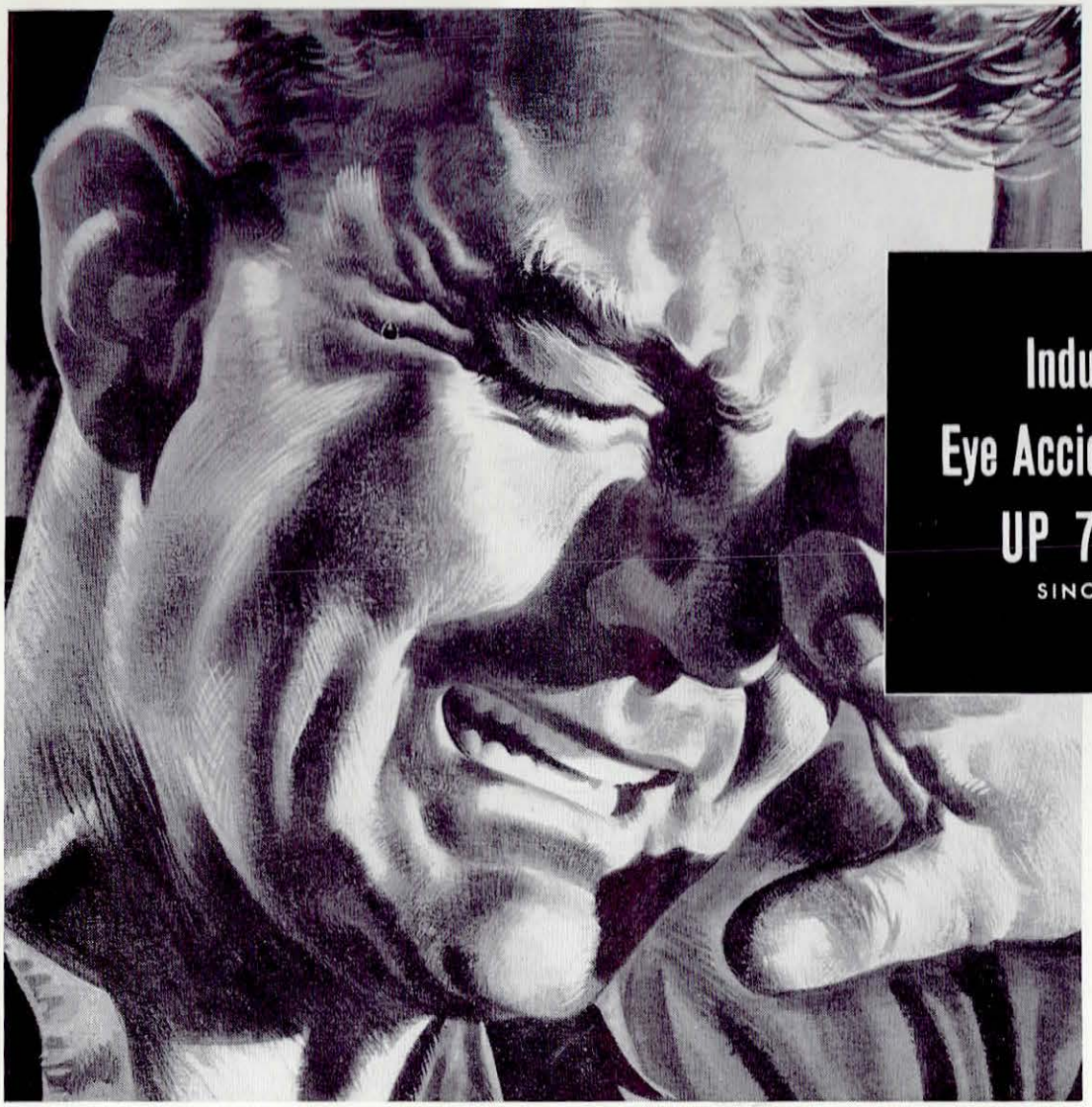
Yours truly,

H Urbach

4,500,000 miles later

The Denver Zephyrs start out again on their daily stint of 1037 miles, better trains than the day they began operating in November, 1936.

Budd



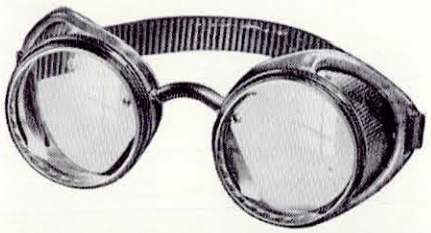
This High Cost...

without a Friend among Management or Workers—

Can Be Cut Immediately!

INDUSTRIAL eye accidents occur at the rate of two a minute. They average more than $5 per employed worker per year in cost. In the campaign to maintain production, wages and profits at rewarding levels, an American Optical Company eye protection program that can prevent 98% of these accidents merits serious consideration. (One large company saved over $44,000 annually with an AO program.)

Your AO Safety Products Representative has complete case histories showing *how much* the AO program does and *how little* it costs! Ask him to call.



American Optical
COMPANY
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

The NEW *Southern Belle*

KANSAS CITY SOUTHERN LINES

The two-unit Diesel locomotives on the new "Southern Belle" trains are made up of Electro-Motive 1,500-HP F7 units.

Diesel locomotives on the new "Southern Belles" use . . .

WHEN the completely re-equipped "Southern Belle" trains were put into service this Spring, Standard HD Oil was chosen to lubricate the Diesel locomotives assigned to those trains. There was good reason for this decision . . . four Diesel locomotives on Kansas City Southern's passenger trains had already totalled nearly 1½ million miles of trouble-free operation on Standard HD Oil.

Kansas City Southern is one of the more than 60 railroads that now use Standard HD Oil on their heaviest passenger and freight runs. This acceptance indicates the ability of Standard HD oil to provide efficient and economical lubrication for all types of Diesel locomotives. Make that your basis for investigating Standard HD Oil.

STANDARD HD OIL

Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY (INDIANA) STANDARD

Be specific – Don't just

Use this table

TYPICAL TEST RESULTS ON RUBBER COMPOUNDS

The tabulation below lists representative values that have been obtained in actual tests of these rubber compounds.

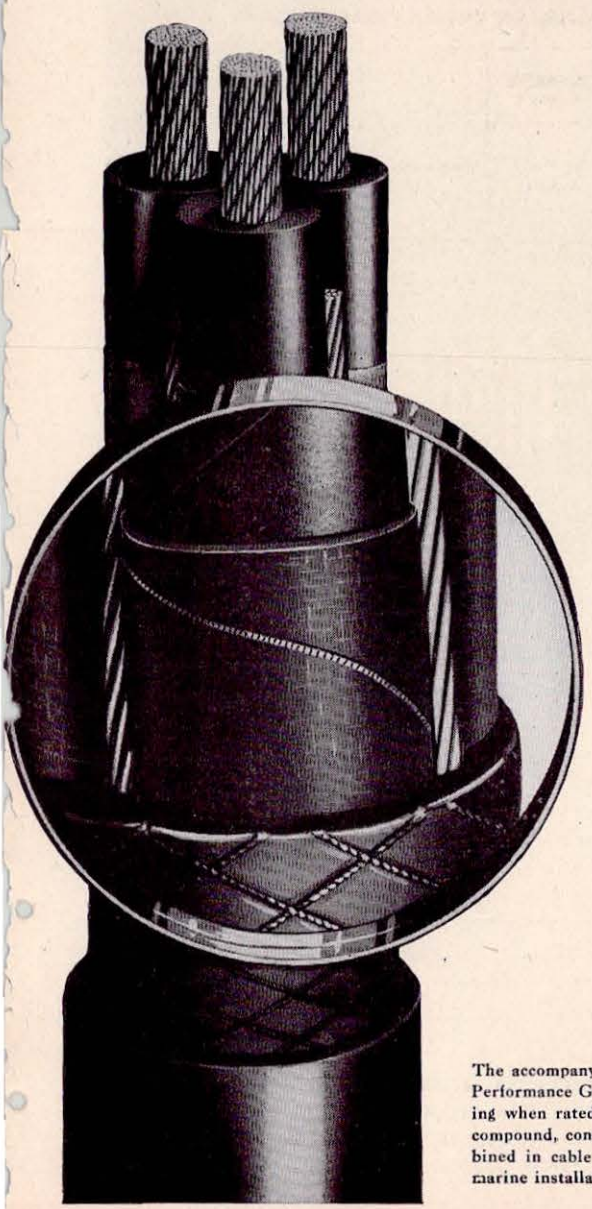
PROPERTIES AND TESTS		REPRESENTATIVE TEST VALUES FOR VARIOUS COMPOUNDS						
		AMARINE —40	AMERZONE —0	AMERZONE —B	AMARINE —RWS	AMERITE	AMPEROX	AMERPRENE
BASIC TYPE OF INSULATION		Natural Rubber	Oil-base	Butyl Rubber	Synthetic Rubber	Commercial 30%	Heat-Resistant	Polychlor-oprene
MAX. REC. COPPER TEMP.		60°C	75°C	80°C	75°C	60°C	75°C	80°C
ELECTRICAL CHARACTERISTICS	Dielectric Constant (Spec. Ind. Cap.)	4.0	4.0	4.0	4.5	4.5	4.5	....
	Ins. Res. (K)	50,000	7,500	40,000	30,000	30,000	20,000	100
	Dielec. strength in volts per mil	450	350	300	400	400	350	200
PHYSICAL PROPERTIES	Tensile Strength in lbs. per sq. in.	2000	600	700	950	1000 Synth. 1500 Nat.	1000 Synth. 1800 Nat.	2000
	Elongation in 2"	450%	300%	400%	450%	500%	500%	500%
	Permanent set	¼"	½"	⅜"	⅜"	¼"	¼"	¼"
ACCELERATED AGING	Type of test	Geer Oven	Geer Oven	Geer Oven	Oxygen Bomb	Geer Oven	Oxygen Bomb	Geer Oven
	Temperature	70°C	80°C	100°C	80°C	70°C	80°C	80°C
	Hours	288	168	672	168	504	336	168
	% Original Tensile Strength	70%	80%	80%	80%	85%	80%	90%
MOISTURE RESISTANCE	Gain in wt. after 7 days immersion at 70°C (Mg. per sq. in.)	25	....	20 or less	15 or less	35	35	30-60
	Capacity increase after 4 weeks immersion at room temperature	15%	15%	15%	10%	15%	15%	....
	Stability Factor 40-80 volts per mil 2 weeks at 50°C	.5%	1.5%	1.0%	.8%	2.0%	3.5%	....
SPECIAL PROPERTIES		High Voltage and Submarine use	Meets IPCEA ozone test	Withstands .03 conc. 10 hours	For hot and moist locations	General purpose rubber insulation	General purpose rubber insulation	Resistant to oil, flame and ozone

As the test data vary considerably with different sizes of conductor and thicknesses of insulation, these identical results can not be guaranteed throughout the whole range of sizes and voltage ratings. Some specific constructions will test higher and others will test lower than the listed values. However, the above table indicates in general what may be expected of these compounds.

AMERICAN STEEL & WIRE COMPANY

say Rubber

for detailed specifications



THE buyer of rubber-insulated cable today is faced with the dilemma of choosing between natural rubber, synthetic rubber, and a dozen different compounds of each.

The American Steel and Wire Company has always advocated the use of special rubber compounds to meet special requirements. To help you choose the right rubber compound, we recommend that you—

Specify	*For*
AMARINE-40	High voltage service under ground or under water, for all submarine power cables and for general use above 7500 volts.
AMERZONE	Ozone-resistance. Amerzone-0 is an excellent oil-base compound. Amerzone-B is a butyl rubber compound that is highly resistant to heat and moisture as well as to ozone.
AMARINE-RWS	Hot or damp locations. This is a compound notable for having low water absorption combined with excellent heat resistance.
AMERITE	General use up to 7500 volts. A compound of the performance type recommended for use where copper temperatures will not exceed 60°C (140°F).
AMPEROX	General use up to 7500 volts where a heat-resistant compound is required for operation at copper temperatures up to 75°C (167°F).
AMERPRENE	Flexible jackets. Owing to its high content of Neoprene, this compound is resistant to oil, flame and sunlight.

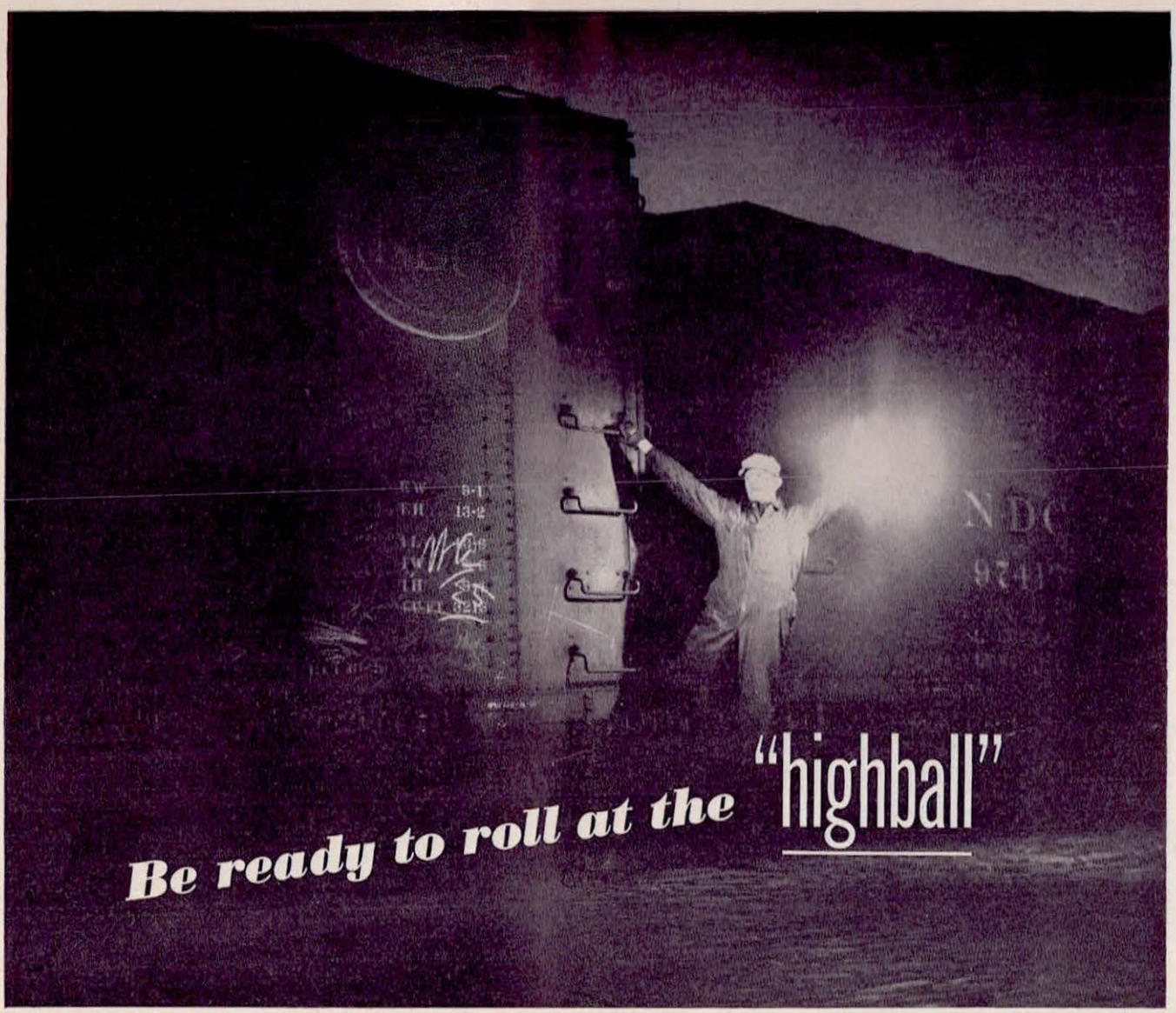
AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA STEEL COMPANY, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM, SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

The accompanying illustration shows one of our standard constructions with Amerite Performance Grade around conductors; conducting rubber tape for non-metalic shielding when rated over 2000 volts. The cover is of Amerprene, a tough, hard-wearing compound, containing a high percentage of Neoprene. These compounds can be combined in cable constructions to fit the requirements of industrial, mining, and submarine installations.

USS

AMERCLAD CABLES

UNITED STATES STEEL



TODAY'S transportation schedules are tight. To meet these schedules freight cars must handle heavy loads at high speeds. Car wheels must be able to take the punishment of hitting curves and pounding through crossings and switches under these strenuous conditions.

That's why so many freight lines are installing U · S · S One-Wear Wrought Steel Wheels. Wherever One-Wear Wheels have been adopted, delays due to wheel failures have greatly decreased. This means more trips per cars, increased revenue for the freight line.

U·S·S One-Wear Wheels stay in service longer without wheel change. Test mileage well over 300,000 miles has been recorded for many of these durable wheels. Some even have traveled 400,000 miles before being condemned. That's because they're manufactured from uniform wrought steel, carefully controlled to assure highest resistance to tread failures caused by thermal checking and shelling.

U·S·S One-Wear Wheels are lightweight . . . save 1300 pounds per car . . . reduce track maintenance costs.

To get the most in service and revenues from your freight cars, install U·S·S One-Wear Wrought Steel Wheels. When the signal is given they'll always be ready to roll!

CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH AND CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM, SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

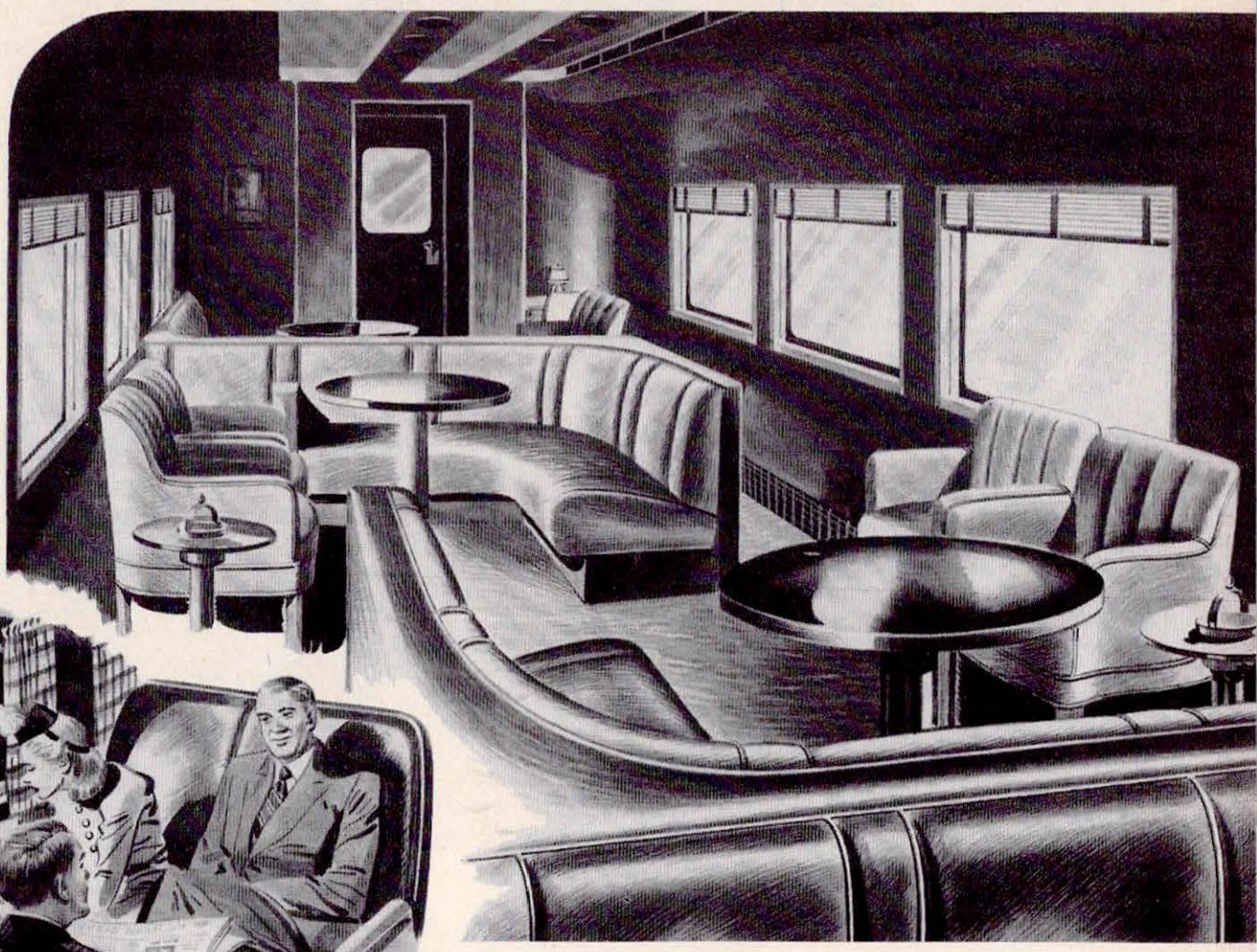
U·S·S ONE-WEAR WROUGHT STEEL WHEELS

9-963

UNITED STATES STEEL

Smart Seating

WITH EXTREMELY LONG WEAR!



Specify TOLEX* *upholstery*

*Reg. U. S. Pat. Off.

TOLEX upholstery adds richness and comfort to accommodations for passenger travel today!

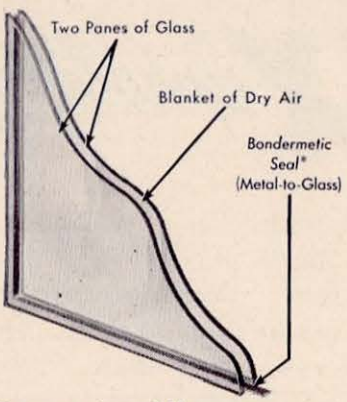
This plastic leathercloth combines *smartness* with outstanding *durability* . . . backed by Textileather's 35 years of know-how and experience as a pioneer producer of leathercloth.

Extra long wear with Tolex upholstery means *lower cost!* Also, it's easy to clean . . . scuff and stain-resistant . . . can be flame-proofed. Broad range of colors and effects. Specify Tolex upholstery for new equipment and replacement. Write for samples. Textileather Corporation, Toledo, O.

35 Years of Public Acceptance

TEXTILEATHER*

NOT LEATHER

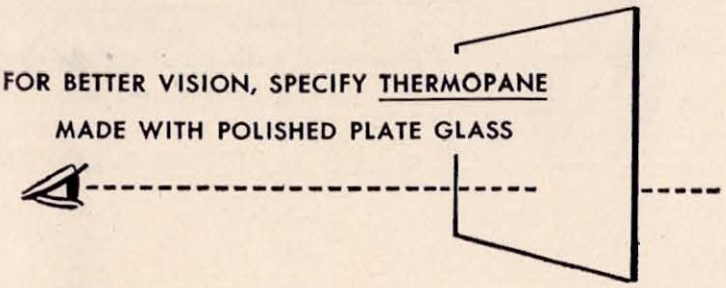


Cutaway view of *Thermopane*

*Thermopane** was chosen for the Astra Domes of the General Motors' "Train of Tomorrow"—and for the side windows. Back of this choice lie the unique properties of *Thermopane*.

This insulating glass consists of two or more panes separated by a dehydrated air space hermetically sealed at the factory by Libbey·Owens·Ford's patented *Bondermetic Seal**. This construction insures clear, unobstructed vision at all times, unmarred by fogging.

Railroad *Thermopane* is composed of types of glass selected to meet the special needs of railroad service. For example, in the *Thermopane* units of the Astra Domes, the outboard pane is tempered Heat Absorbing Plate Glass installed to reduce solar heat and glare. The inboard pane is heat-treated, laminated Safety Plate Glass for an extra margin of safety. A neutral plastic filter is used in the lamination to further reduce glare. The entire glass unit is floated in live rubber for resiliency and quietness. *®



TWO YEARS AND 60,000 MILES LATER—

A Look at the Record of *Thermopane* in the "Train of Tomorrow"

From Portland, Maine, to San Diego—from Miami to Seattle—the General Motors' "Train of Tomorrow" has undergone every extreme of temperature and weather—every hazard of all scheduled runs.

And then some!

More than 4,500,000 persons have been aboard the train, have had a chance to see what *Thermopane* can add to the comfort of modern train travel—*clear vision in all weather.*

From a practical, operational standpoint, we are proud of *Thermopane's* part in the service record of this train. It has demonstrated the remarkable suitability of *Thermopane* for railroad service.

On the "Train of Tomorrow", *Thermopane* has been employed not only for the exacting service "up top", on the Astra Domes, but in all side windows subjected to humid heat, freezing snows and pelting rain on the outside —and cool, conditioned air on the inside. Yet in all 60,000 miles and with continuous air conditioning, *not one single case of leaking or steaming up between the panes has been reported —nor has there been any fogging or condensation.*

But that's only part of *Thermopane's* remarkable service record on the "Train of Tomorrow". Operational damage has resulted in loss of only one unit of *Thermopane.*

What does all this mean for you? Just this: *Thermopane* stands ready to help you provide a maximum measure of comfort and clear vision at minimum maintenance cost. For *Thermopane* windows need not be dismantled for cleaning. The two surfaces are quickly washed in the sash.

Write for descriptive literature on railroad *Thermopane.*

L O F *Thermopane*

MADE ONLY BY LIBBEY·OWENS·FORD GLASS COMPANY

3889 Nicholas Building, Toledo, Ohio

Double Header

You get double play for your money at no extra cost when you specify poles, crossarms, ties or other timber protected by PENTA PRESERVATIVE.

It's Certain. Unlike other wood preservatives, pentachlorophenol (the active ingredient of PENTA PRESERVATIVE) is a chemical entity. It cannot vary in the slightest from time to time or place to place. You can count on getting exactly the same record protection against termites and decay from the PENTA bought today as proved by the PENTA applied many years ago. When you specify PENTA PRESERVATIVE you're *certain* of the protection you're paying for.

It's Clean. PENTA PRESERVATIVE is almost colorless and odorless. Treated poles and timbers are not sticky. They're easy and pleasant to work with; linemen like PENTA-treated poles. PENTA PRESERVATIVE is the *clean* treatment.

For this twin bill of extra benefits, you pay no more than for other preservatives that do not give you equal assurance. Insist on only PENTA PRESERVATIVE treatment the next time you order treated wood. Why take less?

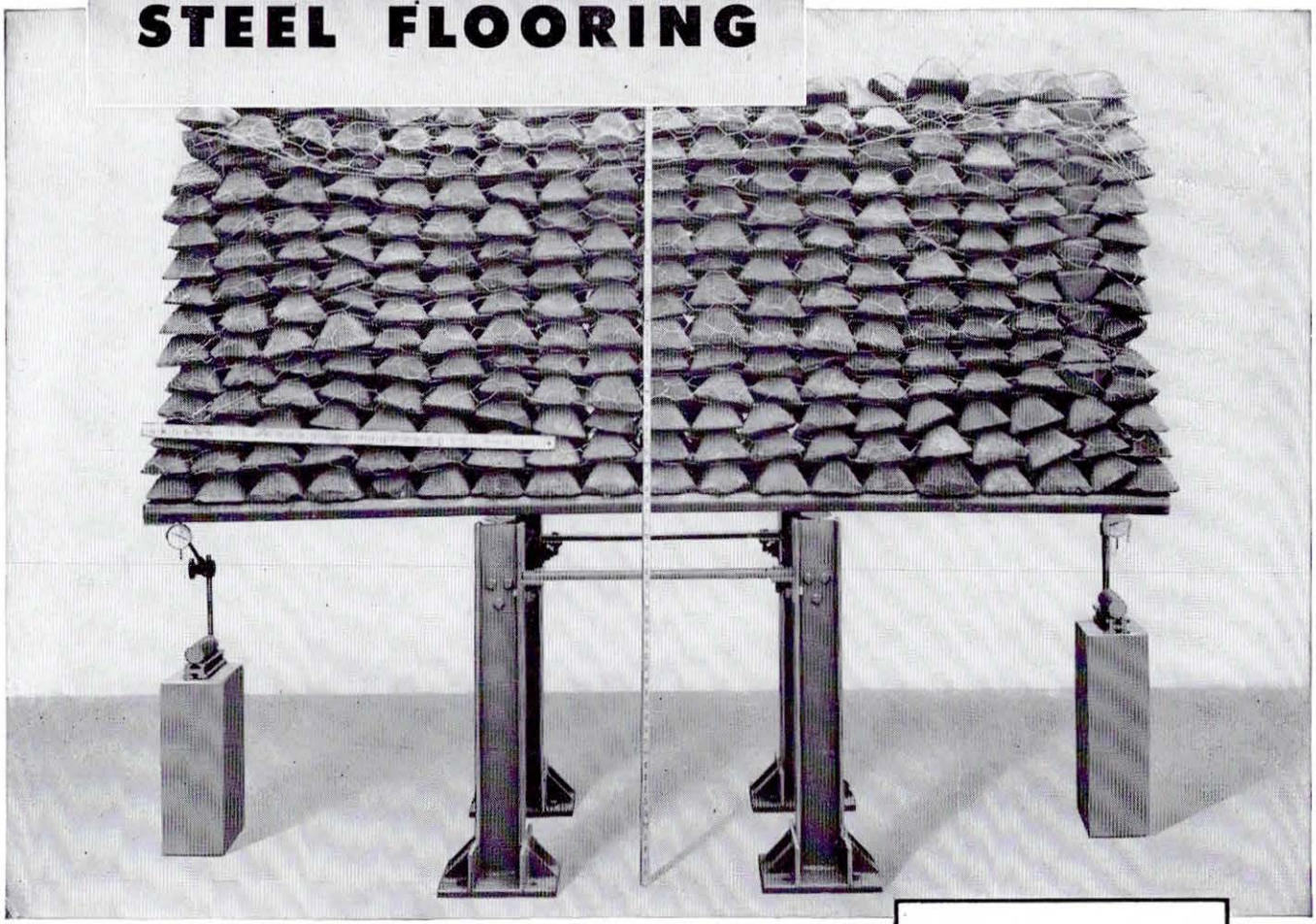
PENTA PRESERVATIVE

CLEAN • IT'S CERTAIN • IT'S CLEAN • IT'S CER TRADE CHAPMAN MARK IT'S CLEAN • IT'S CERTAIN • IT'S CLEAN • IT'S

CHAPMAN CHEMICAL COMPANY ★ **761 Dermon Building, Memphis 3, Tennessee**

STOP DANGEROUS AND COSTLY BOXCAR FLOOR BREAK-THROUGH WITH NAILABLE STEEL FLOORING

In Detroit Testing Laboratory test to determine cantilever strength, 11,000 lbs. of pig iron were loaded on a panel consisting of three NAILABLE STEEL FLOORING boxcar channels welded side by side. The cantilever span was 30". Under this floor load of 733 pounds per square foot—far in excess of heaviest freight loading—the NAILABLE STEEL FLOORING section *hadn't even reached the yield point.*



In actual use as well as in laboratory tests it has been proved that NAILABLE STEEL FLOORING can't break through under *any* kind of heavy freight. Boxcars with NAILABLE STEEL FLOORING have safely hauled heavy copper cakes, automobile engines, highly concentrated loads of sheet steel and tinplate as well as hundreds of other commodities.

No Fork Truck Break-Throughs Either

NAILABLE STEEL FLOORING supports the biggest fork trucks, too, which so often break through conventional floors. For example, 23 cars are spotted each day at the Wabash Railroad's Ford Loading Dock in Detroit. Although they're all new or recently rebuilt, an average of *five* or *six* cars per day come in with large holes somewhere throughout the length of the floor where fork trucks have broken through.

Durability Means Low Maintenance . . . Low Operating Costs

NAILABLE STEEL FLOORING stops the break-throughs—and a good many other common floor troubles. It isn't chewed up by pinch bars or rough freight. Although nails are tightly clinched, they don't tear, splinter or deform the floor. All this adds up to lower maintenance costs—and lower operating costs as well. When floors stay in good condition for all types of freight, cars require less switching and empty movement.

To eliminate dangerous break-throughs and reduce maintenance costs, specify NAILABLE STEEL FLOORING for the next boxcars you build or rebuild.

"Many delays and potential accidents have occurred and are continuing to occur, due to pig iron, lead, copper bars and similar commodities breaking through boxcar floors . . . this condition . . . is due to the type of equipment selected for this type of loading." (Car Department Officers Association Report by Committee on Preparation of Freight Cars, September 20, 1948)

NAILABLE STEEL FLOORING
A GREAT LAKES STEEL PRODUCT

GREAT LAKES STEEL CORPORATION

Steel Floor Division • 3576 Penobscot Building • Detroit 26, Michigan

UNIT OF NATIONAL STEEL CORPORATION

NEW YORK

On July 5th, Budd completed delivery of 239 all-stainless steel railway passenger cars to New York Central—the largest order ever received by Budd from one railroad. The cars are of all types—coaches, sleepers, standard diners, full-length diners, kitchen-lounges, observations. The Budd Company, Philadelphia 32.

CENTRAL

NEW YORK CENTRAL SYSTEM

Budd

Oh! My Aching Back!

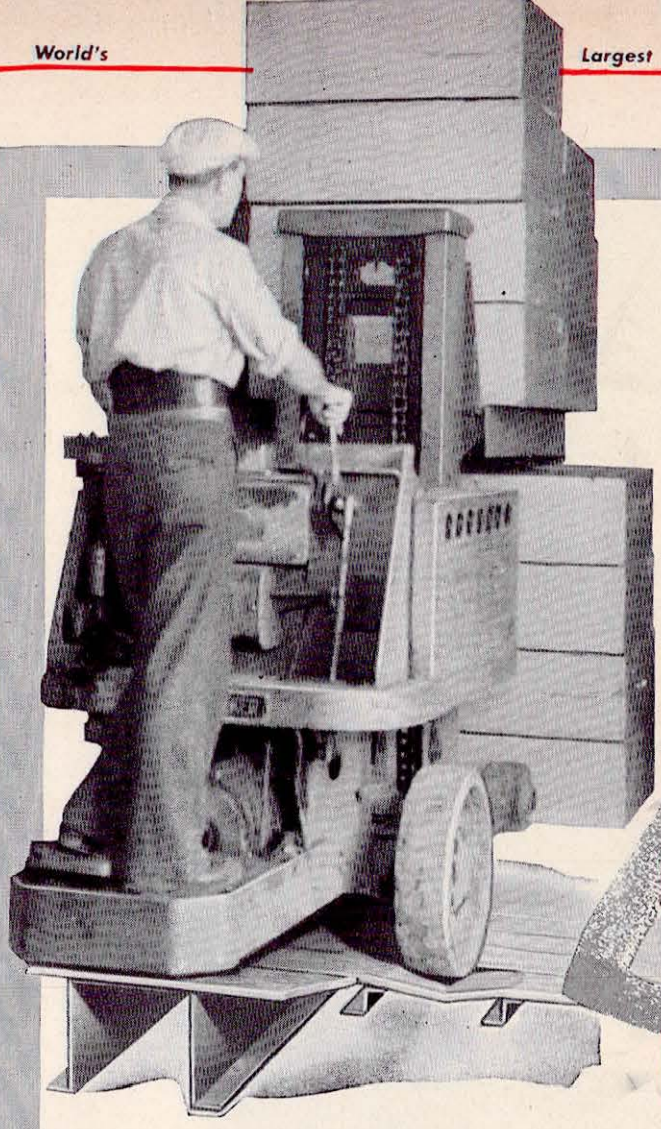
—By Hungerford

Watch for other railroad cartoons by Mr. Hungerford

A cut of suitable size may be obtained at cost by anyone wishing to reproduce the above cartoon.

Address requests to:

Edgewater Steel Company
P. O. Box 478, Pittsburgh 30, Pennsylvania.



THIS

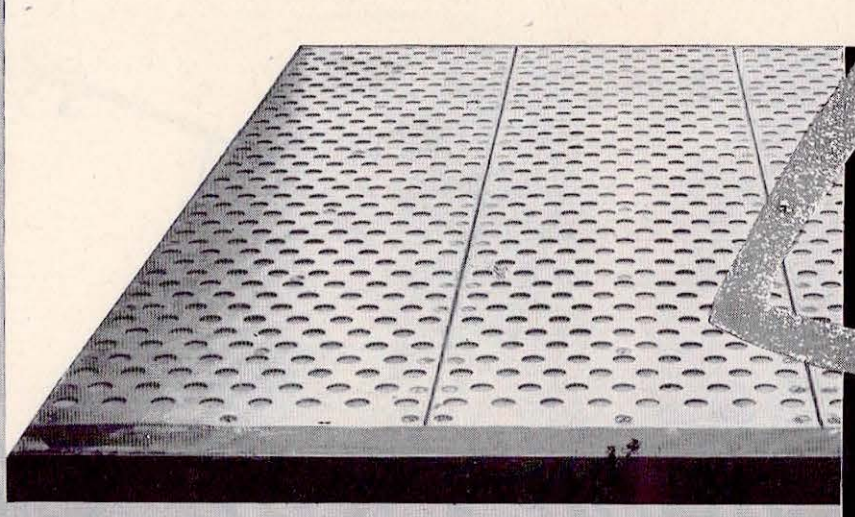
Floor board cannot be expected to support the *dynamic* concentrated loads of todays heavy lift trucks!

Standard

RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 South Michigan Avenue, Chicago 4 · 247 Park Avenue, New York 17

THIS



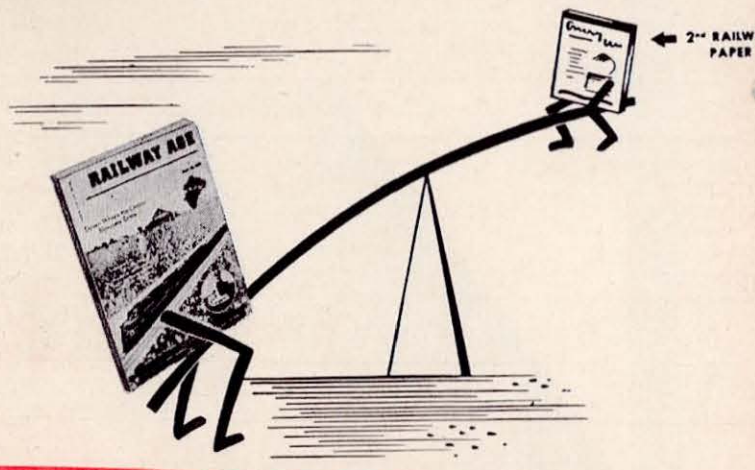
Standard

All Metal Floor Protector is designed to combine the resilience of wood with the strength of steel to support *abnormal dynamic concentrated loads!*

- Standard Floor Protectors provide the advantages of steel without disturbing normal blocking procedure! (Perforations also provide safe, non-skid surface.)
- More than 75,000 applications.
- After *12 years*, wood floors are still *new!*
- *Low* application cost—for new cars or existing equipment.

Editorial Leadership 3 to 1

in total text pages



FIRST IN ITS FIELD ★ IN EDITORIAL INFLUENCE

"The Importance of Railway Age as an Advertising Medium Is Greatly Due to It's Well-Founded Editorial Policy in Behalf of the Railroads . . ."

—Railway Supply Manufacturer

Yes, in editorial service and in editorial influence, *Railway Age* stands pre-eminent in its field.

Railway men and manufacturers alike are quick to recognize its leadership, because they know . . .

1. *Railway Age* is the industry's authoritative *weekly* magazine that covers the whole field of important railway developments *while the news is hot.*

2. It gives full attention to the major problems of railroading—traffic development, legislation, labor relations, finance, and related subjects . . . a field that no other railway publication attempts to cover.

3. It reports and interprets the current facts and detailed statistics of railway operations; maintains a continuous public relations activity in behalf of railway progress.

But that is not all. *Railway Age* also publishes more than 780 pages of information annually on departmental subjects . . . cars, locomotives, communications, accounting, and so forth.

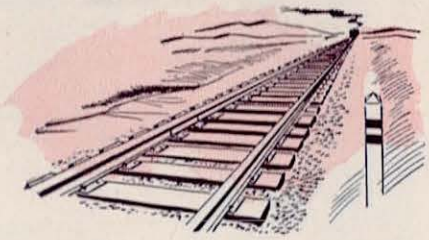
Railway Age is able to render this comprehensive, *balanced* editorial service because it is geared to the job. It invests more dollars in editorial service than any other railway publication. Staffed by 27 specialists, it is able to cover every facet of railway transportation. Its editors are constantly in the field seeking first-hand facts.

That's why Railway Age leads its field. That's why advertisers invest more advertising dollars in *Railway Age* than in any *three other railway publications combined.*

ABC **RAILWAY AGE** ABP

IN BREADTH OF EDITORIAL SERVICE

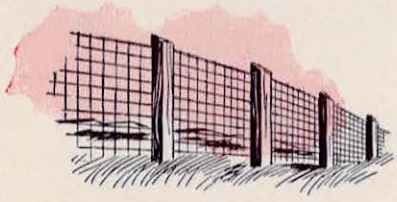
Here's a Wood Preservative You KNOW will work



With today's high cost of lumber, it becomes more vital than ever to use a wood preservative of *proved* dependability.

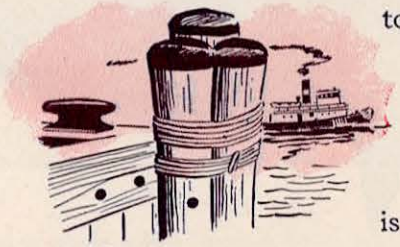
Creosote Oil meets this requirement outstandingly. It is the most widely used wood preservative in the world.

Properly applied, Creosote Oil extends the life of wood 3 to 5 times, or more. Its deep penetration protects wood from dry rot, fungi, termites and other destructive pests.

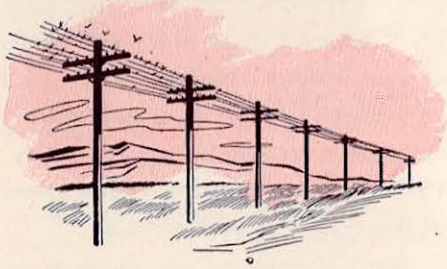


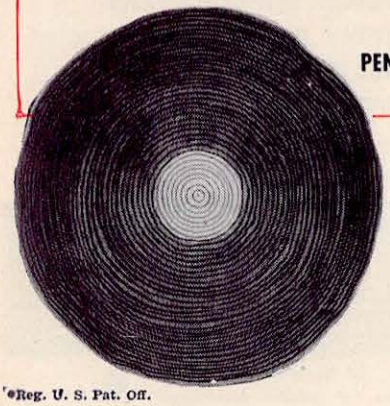
Creosote Oil is the only wood preservative that has been successfully used under practically all conditions for more than 100 years.

For these reasons, Barrett continues to recommend pressure treatment with Creosote Oil as the most dependable wood-preserving method for users who *must* be able to count on the results. For these reasons, also, Creosote Oil continues to be the wood preservative that is preferred by leading railroads and utilities for the protection of ties, poles and structural timber. When a demonstrably better method of preserving wood is developed, to the point where it can be recommended for the protection of large lumber investments, you may be sure Barrett will sponsor it.



Today, as for the last 100 years, Creosote Oil is the most reliable safeguard of your lumber investment.





PENETRATES to the HEARTWOOD

THE BARRETT DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

Barrett*

*Reg. U. S. Pat. Off.

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ABC **RAILWAY AGE** ABP

IN BREADTH OF EDITORIAL SERVICE

BROWNHOIST'S 1949 DIESEL ELECTRIC LOCOMOTIVE-CRANE MARCHES IN THE PARADE OF BROWNHOIST *FIRSTS!*

PIONEERS IN DEVELOPMENT OF DIESEL POWERED CRANE IN 1928

FIRST ELECTRIC LOCOMOTIVE-CRANE 1901

THE FIRST GAS-ELECTRIC LOCOMOTIVE-CRANE 1929

MORE THAN FIVE HUNDRED DIESEL POWERED CRANES IN SERVICE

FOR 75 YEARS BUILDERS OF MORE THAN 20,000 CRANES (15,000 STILL IN SERVICE)

THE WORLD'S LARGEST CAPACITY DIESEL POWERED RAILROAD CRANE

NEW BROWNHOIST DIESEL ELECTRIC LOCOMOTIVE-CRANE

Continuing their firsts, Brownhoist *alone* offers a complete line of Diesel Electric Locomotive-Cranes. Standard models available for every capacity requirement include the D.E.-30, D.E.-50, D.E.-60; special larger capacity sizes built to order. Write for complete information and literature.

INDUSTRIAL BROWNHOIST CORPORATION • BAY CITY, MICHIGAN

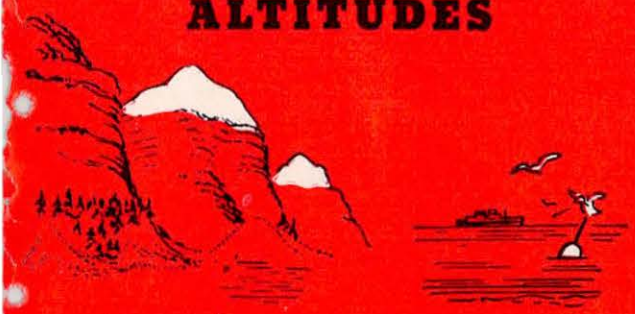
DISTRICT OFFICES: New York, Philadelphia, Cleveland, Chicago. **AGENCIES:** Detroit, Birmingham, Houston, Los Angeles, Portland, San Francisco, Seattle, Spokane. Canadian Brownhoist Ltd., Montreal, Quebec.

EDWARDS DOUBLE GLAZED SASH FOR CONSTANT, BRILLIANT VISIBILITY

IN ALL SEASONS

CLIMATES

ALTITUDES



EDWARDS double glazed, double sealed, dehydrated units may be mounted in two general types of aluminum, bronze or stainless steel sash frames for installation in the window opening.

The first of these designs, generally used up to this time, is the double metal frame type requiring complete removal from the car opening and disassembly of the two frames whenever glass replacement must be made.

The second is an improved design recently developed and being introduced by EDWARDS. It permits quick, easy replacement of the double glazed unit by unskilled workmen without the use of tools. No removal or disturbance of the sash frames is necessary. Replacement expense, unavoidable with the double frame type, is greatly reduced.

For complete, detailed information on the different types of double glazed units and various designs of sash frames, write us.

THE O. M. EDWARDS CO., INC., SYRACUSE, N.Y.
New York Office — 50 Church St., N.Y.C.

In Canada: O. M. EDWARDS CO. OF CANADA LIMITED
Offices and Plant
4000 NAMUR ST., MONTREAL 16

EDWARDS SASH
THE EYES OF TRANSPORTATION

SASH FOR EVERY TYPE OF TRANSPORTATION—ON LAND, ON THE SEAS, IN THE AIR

"There's Safety in these Numbers"

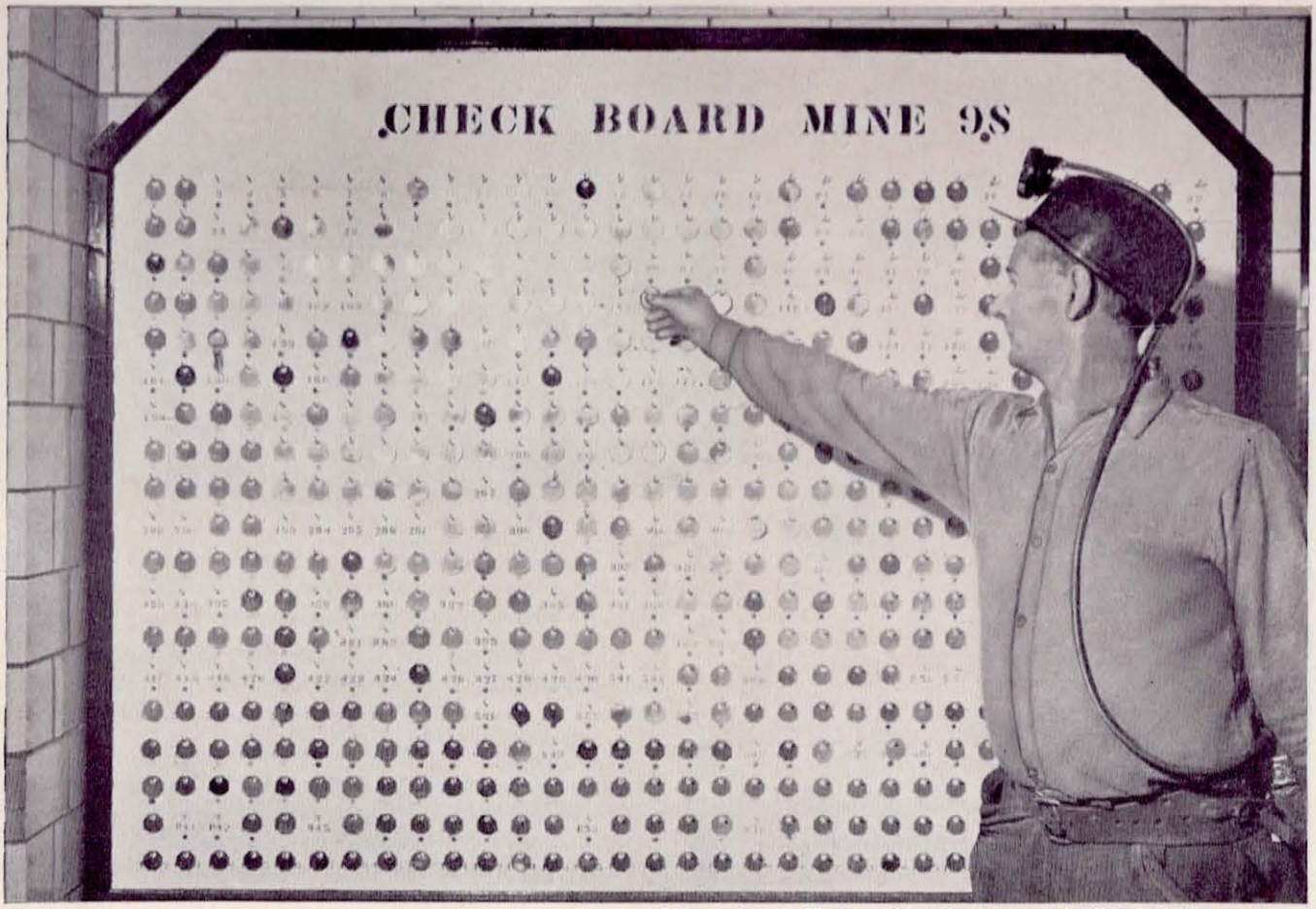


Photo taken in Northern West Virginia coal fields by William Vandivert

When a man goes underground in most modern coal mines, he removes an identification tab from a board like the one shown here. It provides a visual check on *each* man, which is as basic a step in any mine-safety program as "counting the noses" in a large family after a day at the county fair.

This simple measure is one of dozens of practices aimed to make mining safer. Indeed, modern mining techniques make it possible to offset almost every hazard of mining except one—and that is the natural human tendency to become calloused to danger.

In fact, U. S. Bureau of Mines records show that individual carelessness, not spectacular mine disasters, add up to the big majority of *all* accidents. That's why trained safety experts strive to make *all* miners safety-minded, every hour of every day. Beyond that, the industry invests over 80 million dollars *annually* in health and safety equipment. As a result of co-operative efforts among operators, unions, and government, last year's coal mining safety record was the best since the Bureau of Mines first began keeping figures *over 39 years ago.*

Any discussion with mine safety experts about safety in America's coal mines winds up in agreement on one point. The problem of mine safety is a problem in human nature.

That's why the industry, through the efforts of its industrial mine-safety supervisors, works hard to popularize mine-safety concepts. They not only talk safety, display safety measures in specially designed posters, but even "sloganize" safety. One example of this last is the use by miners of the phrase *"Be careful"* as a casual greeting whenever and wherever they meet each other in the mine passageways underground.

BITUMINOUS COAL

BITUMINOUS COAL INSTITUTE

A Department of National Coal Association

WASHINGTON, D. C

BITUMINOUS COAL . . . LIGHTS THE WAY . . . FUELS THE FIRES . . . POWERS THE PROGRESS OF AMERICA

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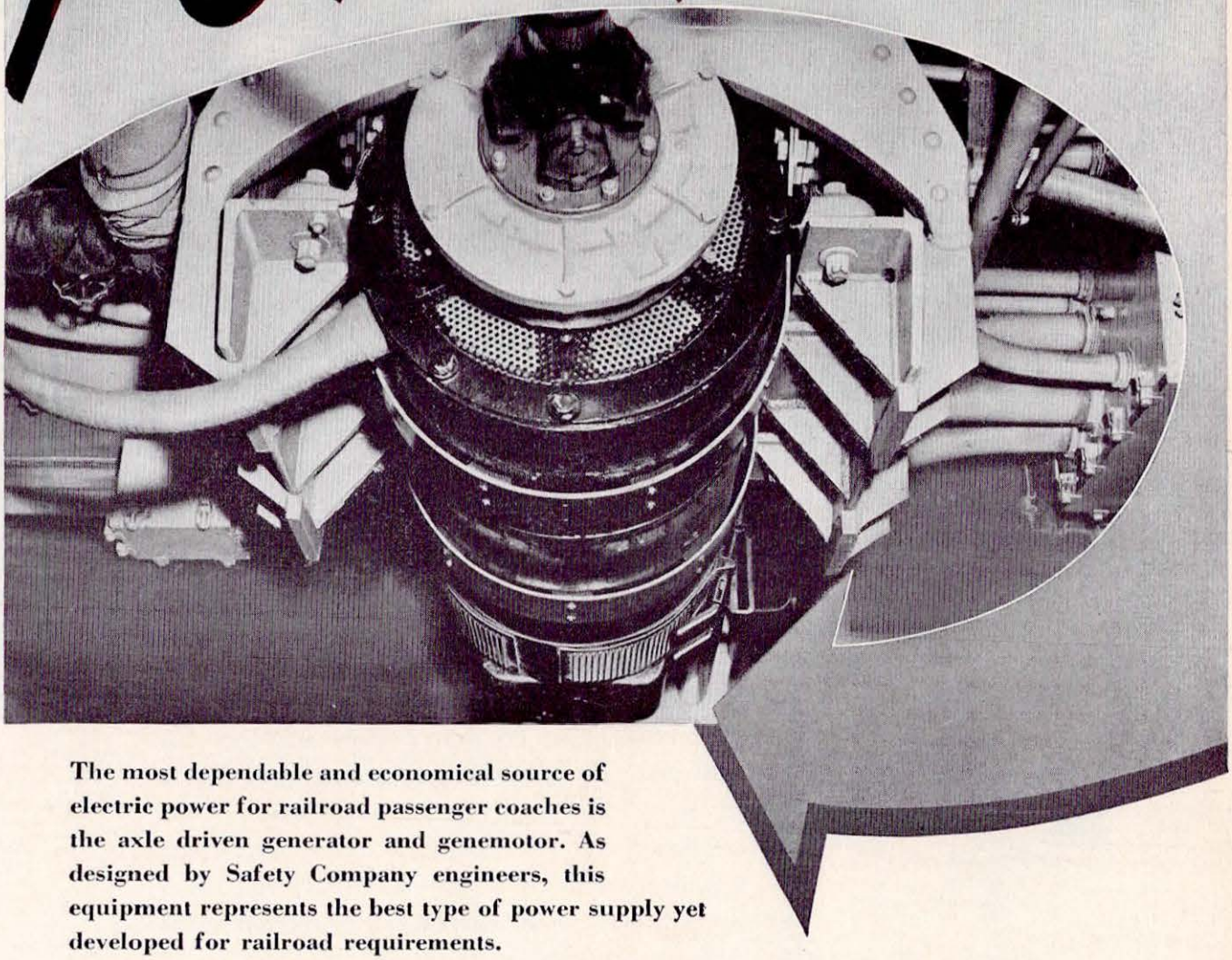

The most dependable and economical source of electric power for railroad passenger coaches is the axle driven generator and genemotor. As designed by Safety Company engineers, this equipment represents the best type of power supply yet developed for railroad requirements.

Safety Company generators and genemotors reflect 35 years continuous research and development by engineers trained in the railroad industry. Equipment is made to assure maximum efficiency and economy in operation . . to simplify maintenance . . and to withstand the rigors of railroading.

Safety Company's modern manufacturing and inspection methods assure minimum maintenance and many years of trouble-free service.

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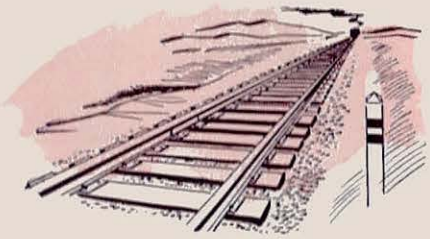
Here's a Wood Preservative You KNOW will work

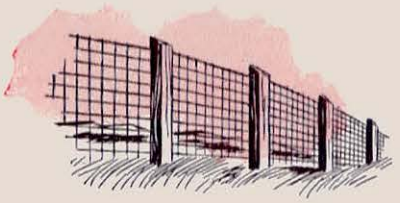


With today's high cost of lumber, it becomes more vital than ever to use a wood preservative of *proved* dependability.

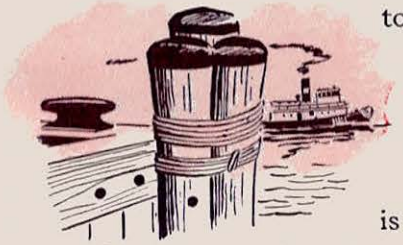
Creosote Oil meets this requirement outstandingly. It is the most widely used wood preservative in the world.

Properly applied, Creosote Oil extends the life of wood 3 to 5 times, or more. Its deep penetration protects wood from dry rot, fungi, termites and other destructive pests.

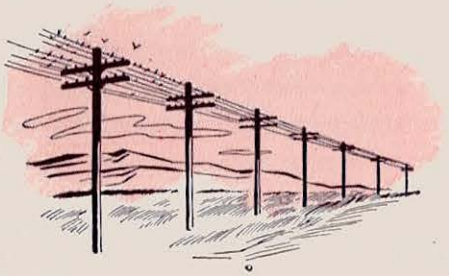
Creosote Oil is the only wood preservative that has been successfully used under practically all conditions for more than 100 years.

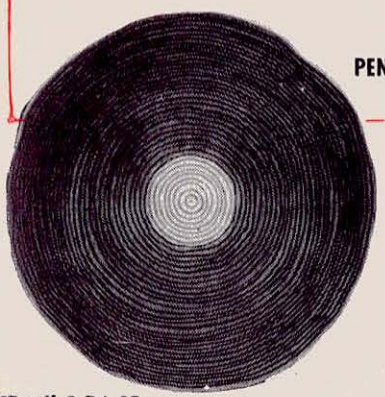


For these reasons, Barrett continues to recommend pressure treatment with Creosote Oil as the most dependable wood-preserving method for users who *must* be able to count on the results. For these reasons, also, Creosote Oil continues to be the wood preservative that is preferred by leading railroads and utilities for the protection of ties, poles and structural timber. When a demonstrably better method of preserving wood is developed, to the point where it can be recommended for the protection of large lumber investments, you may be sure Barrett will sponsor it.



Today, as for the last 100 years, Creosote Oil is the most reliable safeguard of your lumber investment.





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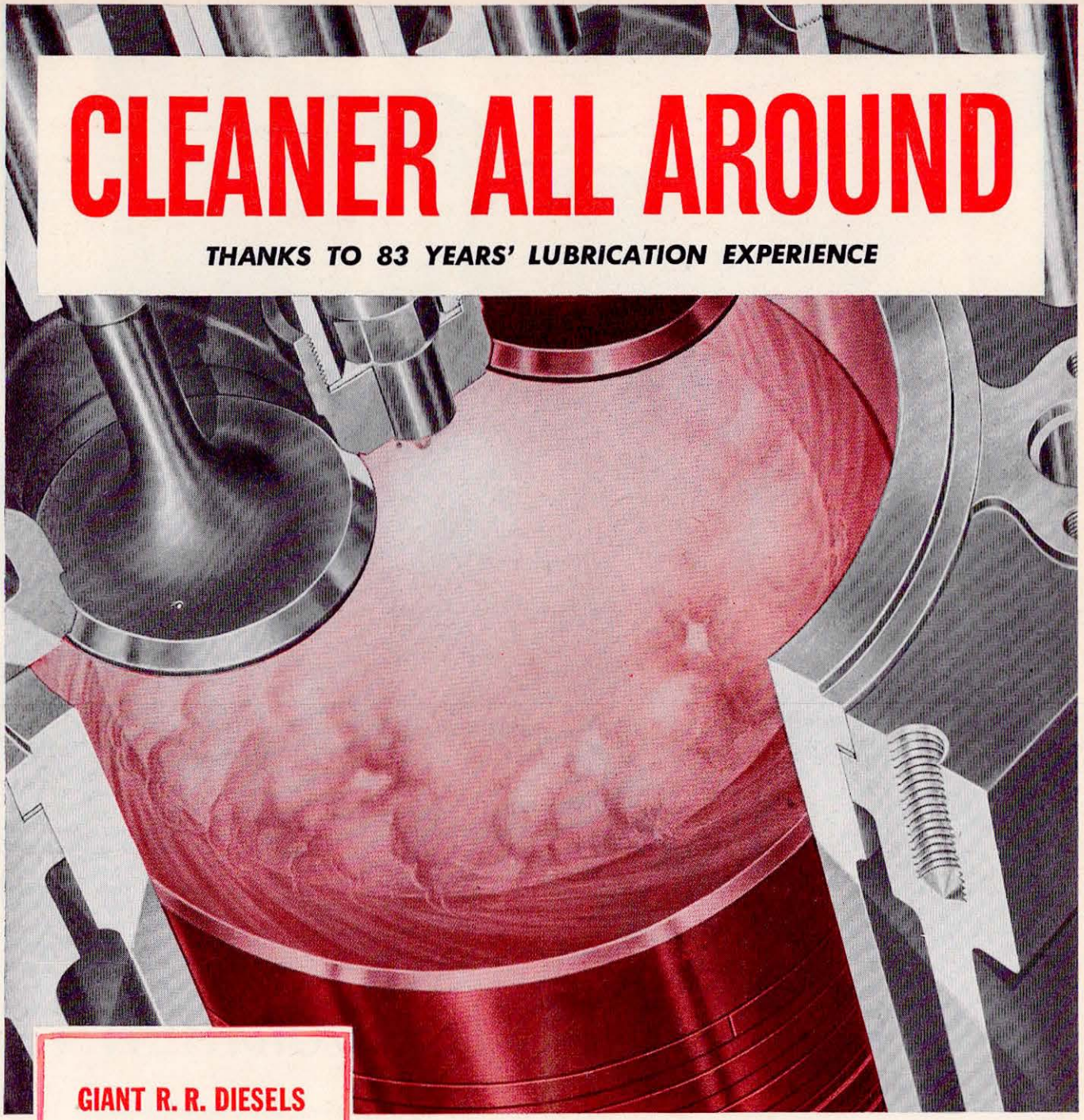

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Operators of leading railroads report that pistons, rings, valve stems, cylinder ports and crankcases stay clean longer—with corresponding increases in efficiency and savings in maintenance time and costs. All this is the result of our 83 years' lubrication experience—our 50 years of keeping pace with Diesel progress.

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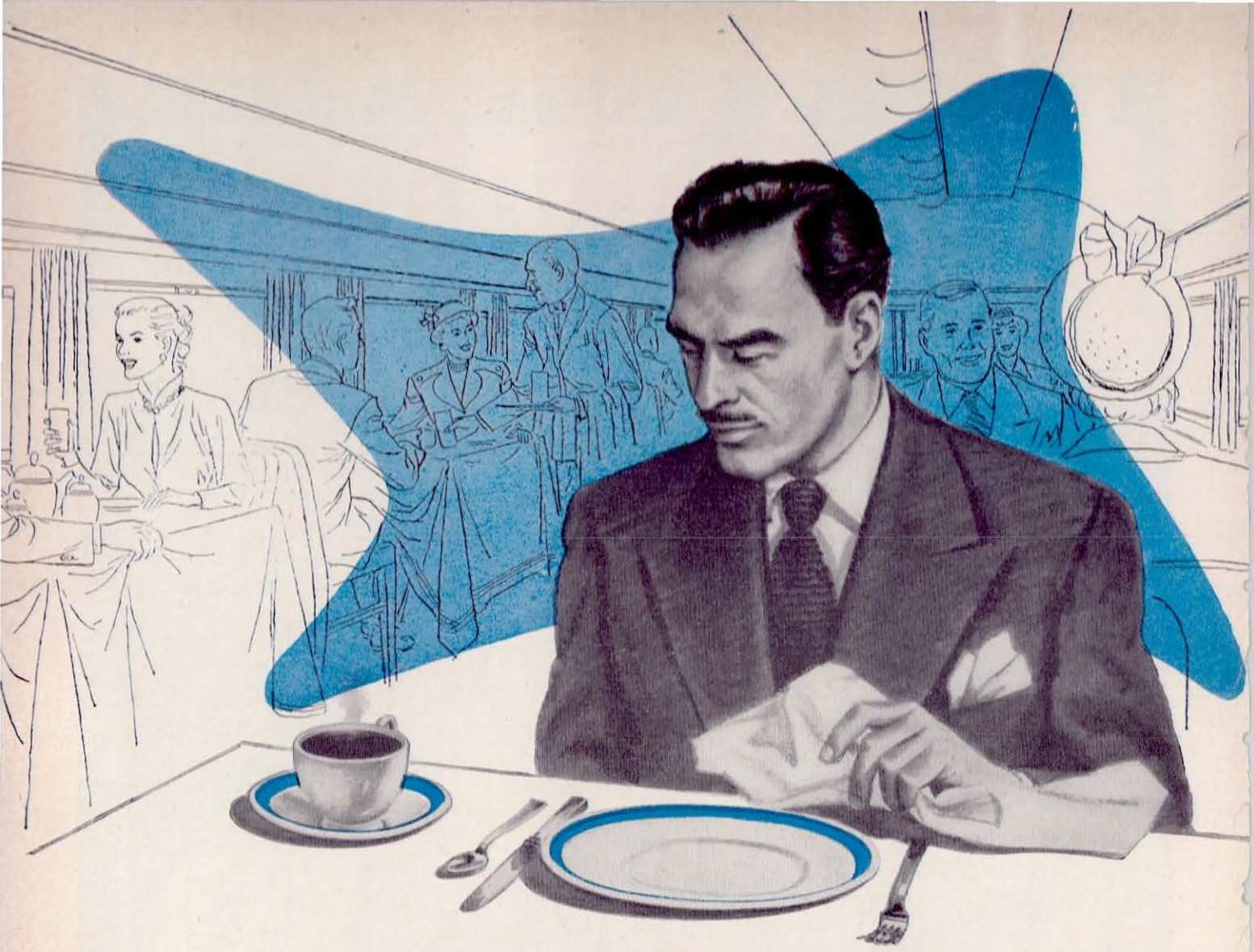
Rely on **SOCONY-VACUUM**
Correct Lubrication



do you know the coffee cup test of Smooth Train Operation?

It's not listed in any engineering text . . . but a full coffee cup sitting in a clean, slopless saucer on a dining car table tells a lot about the smoothness of the ride . . . and the comfort of the passengers. And in this highly competitive day, these things are highly important.

With all the care and skill in the world, it is difficult to handle a modern heavy, high-speed passenger train without some jerking and jolting . . . unless the brake equipment is designed specifically to do the job. Westinghouse HSC Electro-pneumatic brake equipment gives the precise, velvet-smooth control that is needed. Braking impulse is transmitted to every car in the train simultaneously. The Speed Governor Control automatically proportions the brake pressure to the speed. The "AP" Decelostat immediately softens brake pressures if wheel slip impends.

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Vol. 127, No. 7 August 13, 1949

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The Westbound Time-Freight Yard at Portsmouth, Ohio on the Norfolk and Western is an excellent example of how in small, as in large classification yards, you can cut classification time . . . handle more cars . . . by installing "Union" Car Retarders.

This 18-track yard, equipped with 3 electro-pneumatic retarders and 20 power switches controlled by one operator, consolidates all the classification work formerly performed in 3 yards . . . with greater overall efficiency.

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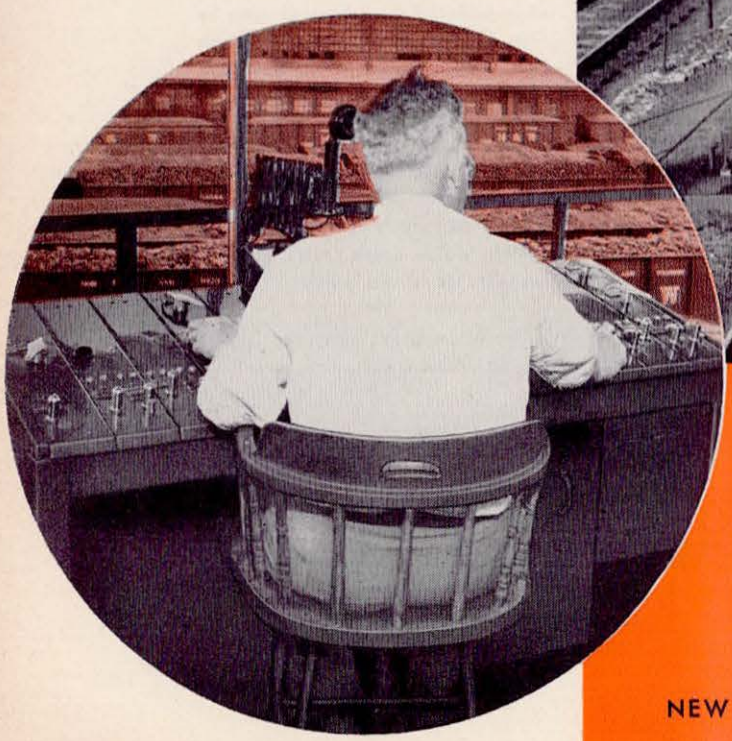

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NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

"WAD SOME POWER THE GIFTIE GI'E US": To see ourselves as others see us is not always easy. But it's somewhat simpler in these days of questionnaires and public opinion polls than it was when Robert Burns wrote his famous lines. Our News section this week summarizes the results of two recent railroad efforts to ascertain how they are regarded by others—the ninth annual survey of public opinion conducted for the A.A.R. by Opinion Research Corporation, and a questionnaire sent by the T. & P. to its own employees.

$60 MILLION FOR CLEANING: It's hard to believe that any industry would deliberately load plant rubbish into empty freight cars as a means of getting rid of it at railroad expense. Yet some instances of such behavior were uncovered in a special study of the car cleaning problem recently conducted by a large western railroad, and reported on page 60. This road's experience indicates that the cleaning out of debris left in freight cars may be costing the railroads as much as $60 million a year. The problem is one of mutual concern to the railroads and to shippers—because the cost of cleaning cars is necessarily reflected in railroad rates; because "dirty" cars often lead to damaged freight, and because rubbish and debris is always a potential accident hazard.

CONSTRUCTION INDICES: At 281, the overall railroad construction index for 1948 for the country as a whole was the highest in the 34-year history of these indices, issued by the Engineering Section of the I.C.C.'s Bureau of Valuation. A comparison of the 1948 index with those for prior years is included in the article on page 69.

NEW T. & P. FREIGHT TERMINAL FOR DALLAS: Beginning on page 64 is a copiously illustrated description of the Texas & Pacific's new l.c.l. freight terminal at Dallas, Tex.

GILDING THE LILY: If there is any phase of railroading which would seem to deserve complete exemption from further legislative or regulatory harassment, that is the matter of safety. Without exception, railroad managements are—and have long been—notably safety-minded; the overall railroad safety record has improved tremendously and, on the whole, consistently, over the past quarter century. Yet Congress—and apparently the Interstate Commerce Commission, too—is in a great dither over the so-called "radio rules" bill (H.R.378-S.238), now pending before the former body. The latest discussion on this bill before a House committee (as reported in the News pages) produces the inevitable feeling that time, effort and energy are being uselessly expended to "gild the lily" of railroad safety, while much larger questions of fundamental policy—far more important to the railroads, to the long-run interests of railroad employees, and to the country—go unanswered.

GOING AFTER BUSINESS: There are many ways to build up railroad freight traffic—but one of the surest and best is to go right out after it, by providing such good developmental service for new industries that they will want to locate on-line and ship by rail. The Central of Georgia believes in that method, and has followed it with remarkable success, as is evidenced by the article which begins on page 70. The article is a companion piece to the account in last week's *Railway Age* about the C. of G.'s success in building up its passenger business with short-run streamliners.

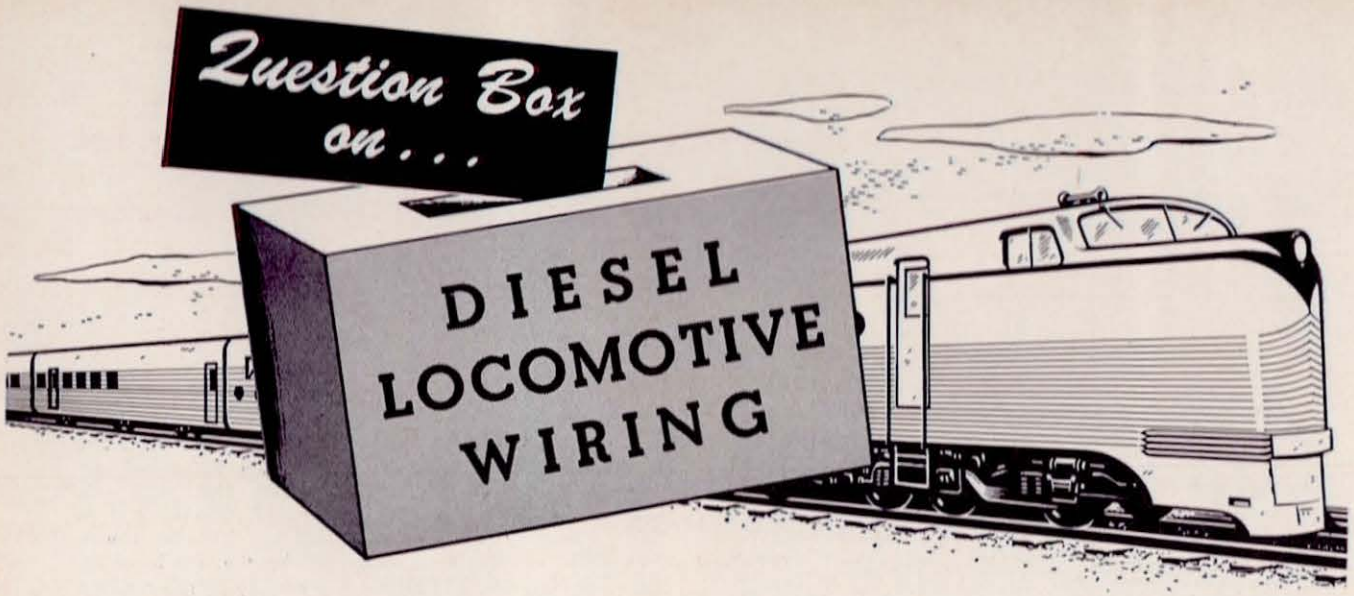
FROM TOURIST TO BAGGAGE: A short illustrated article on page 73 tells how the Chicago, Indianapolis & Louisville converted a 32-year-old Pullman tourist car into a baggage car.

RENAISSANCE FOR STEAM POWER? The Diesel-electric locomotive has, beyond any question, produced for the railroads major operating economies and important operating advantages. But it has also made them more dependent than ever before on liquid fuel—which might not be an unmitigated advantage in the event of another war. On page 56, Chadwell O'Connor, Pacific Coast power plant engineer, outlines some possible avenues of exploration in the further development of steam motive power.

WHOSE MONOPOLY? Like the fictional character who mounted his horse and "rode rapidly off in all directions," the Department of Justice has been making a great pretense of fighting "monopoly," by attacking alleged monopolistic policies in business and industry. And all the time the greatest monopoly of all—that of certain elements of organized labor—has grown, and grown, and grown! John L. Lewis, by his single-handed action in putting "his" coal miners on a three-day week, has brought that labor monopoly out into the open. There ought, as our leading editorial points out, to be some means of protecting the public—including railroad employees—against the willful exercise by one man of such high-handed tactics.

H. C. MURPHY: As reported in last week's *Railway Age*, Harry C. Murphy, vice-president (operation) of the Chicago, Burlington & Quincy, has been elected president of that company, to succeed Ralph Budd, when the latter retires on September 1. Mr. Murphy's 35-year railroad career is reviewed on page 72.

STILL SHOPPING AROUND: Our regular review of railroad purchasing (pages 62) shows that the buying picture for May was somewhat mixed, but that total purchases were just a little higher than in April.



Q. Where on a diesel electric locomotive is the choice of correct wiring important?

A. In wires to be used in generator leads and motor leads, in power jumpers and control jumpers, in lighting systems, in lines to headlights, on controllers and as cab signal wiring.

Q. What three properties are in particular demand in wires and cables for these services?

A. **OIL RESISTANCE**
NON-FLAMMABILITY
PROTECTION FROM MECHANICAL DAMAGE

Q. What cable possesses these to an unusually high degree?

A. **OKONITE-OKOPRENE CABLE**

Q. What are the two main components of this cable?

A. OKONITE insulation is the original 30% (by weight) mineral base rubber insulation made with wild up-river fine Para rubber. OKOPRENE, for coverings and sheaths, is an Okonite-developed neoprene compound.

Q. What other characteristics has Okonite insulation?

A. An exceptionally long service life. Ability to retain its high tensile strength and elasticity. High electrical values.

Q. How does this cable perform when oil is sprayed out within the locomotive or dropped from the diesel itself?

A. The Okoprene coverings, when exposed to the solvent action of petroleum products, protect the wire insulation from swelling or softening. Tough, wear-resistant Okoprene sheaths retain their full mechanical strength after such exposure.

Q. Do Okoprene coverings support combustion?

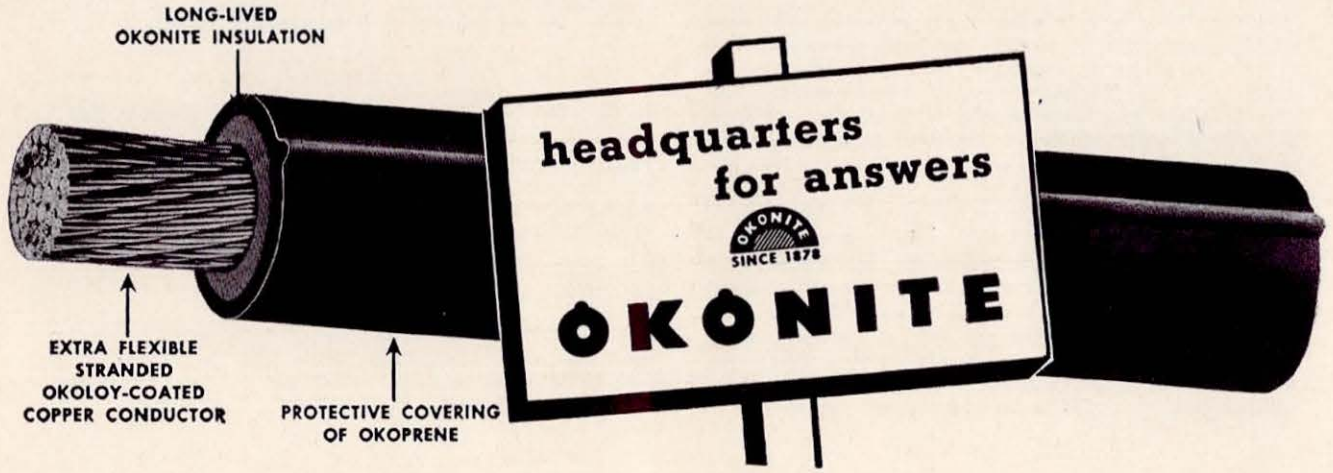
A. No. When tested in accordance with flame tests of Underwriters' Laboratories, Inc., Okoprene coverings meet all requirements. With Okoprene-protected cables, fire cannot be communicated along the cables.

Q. What other characteristics have Okoprene coverings?

A. When subjected to moisture, they will not rot or deteriorate. They are chemical resistant. They have no saturating compounds to erode or flake off. They give added electrical protection, as Okoprene is itself an insulating material.

Q. Where can I learn more about Okonite cables for diesel electric locomotive service or other railroad communication, lighting, signaling or roundhouse applications?

A. Specifications and dimensional data on Diesel wiring are included in Bulletin RA-2078. For other wire and cable information just ask your Okonite representative, or write The Okonite Company, Passaic, N. J.



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WHY MONOPOLIES FOR LABOR UNIONS ALONE?

The monopolies now possessed, used and abused by such leaders of labor unions as John L. Lewis are not only a menace to the nation, but their existence is entirely contrary to what has been one of the most important traditions and principles of the American system from its inception. As Felix Morley says in his recent book, "The Power in the People," "The form of the American Republic is *directed against monopoly of any kind*—social, religious, political or economic."

"Great Power Always Corrupts"

It was plainly intended by those who framed and adopted the Federal Constitution that it should *prevent great concentrations of power anywhere and for any purpose.* Lord Acton later expressed a view which influenced the makers of the Constitution more perhaps than any other consideration when he said, "Great power always corrupts; absolute power corrupts absolutely."

In view of the opposition to almost every form of monopoly that the American people always have shown and still show, it is an amazing paradox that they regard apparently with a feeling of good-natured tolerance or helplessness such possession and abuse of power by leaders of labor unions as are typified by Lewis' restriction of working time in the coal mines to three days a week. The purpose and effect of Lewis' action are plain and uncontroverted. It is intended to restrict the production, transportation and storing of coal. This will increase the labor union's strength in bargaining with the mine operators regarding wages, working conditions, pensions and so on. It will help to maintain the prices that the mine operators can exact from consumers of coal, both industrial and domestic. To whatever extent it contributes toward maintaining the prices of coal paid by industry it will maintain costs of production in industry and the prices that industry must and will charge consumers for its products. Also, consumers will be bilked by the resulting higher prices they will have to pay for the coal they will use for the domestic purposes of keeping their homes warm and cooking their food. The railways will be injured by the loss of coal traffic and, like other consumers, by having to pay excessive prices for coal.

Theoretically, the operators of the mines by making and carrying out an agreement could cause the restriction of the production and transportation of coal and the maintenance or increase in its price that are being caused by the miners' union under Lewis' leadership and dictation. But such action by the operators would be in flagrant and criminal violation of the federal anti-trust law and would be prevented or immediately stopped by an injunction prohibiting it which would be issued by the first federal court to which the Department of Justice made application for it.

Formerly, the anti-trust law forbade *all* combinations, conspiracies and acts in restraint of trade or commerce. The restriction of coal mining to three days a week is as plainly, openly and defiantly in restraint of trade and commerce as any other action ever taken in the history of this country. Why, then, does not the government proceed under the anti-trust law to stop it? Because, beginning with passage of the Norris-LaGuardia Act in 1932, Congress has by legislation expressly exempted labor unions from the application of the anti-trust act. This has enabled all the more important labor unions in industry and transportation to acquire nation-wide monopolies in their field, and thereby to become by far the most powerful *private organizations* that ever existed in the United States. And the concentration of all the power of these organizations in the hands of their leaders has made their leaders the most powerful men in the nation, whether inside or outside of government. This is proved by the fact that nobody excepting John L. Lewis, whether inside or outside of government, could restrict production in the coal mines to three days a week.

If this power of monopoly which is now possessed by labor union leaders is not soon destroyed by government it will in due course be so used and abused as to destroy the American government and the American economy. For the labor union leaders do not use it merely for purely *economic* purposes. They are using it also politically and for political purposes—i.e., to control the votes of their members, and thereby to determine who shall be elected to public office and the policies of government that shall be adopted by those elected. A striking illustration is presently afforded by the way they are raising money and otherwise preparing to try to defeat Senator Taft for re-election in Ohio in 1950, because of his leadership in behalf of the Taft-Hartley Act and his opposition to most—but not all—socialistic policies.

It Doesn't Make Sense

The monopoly power of the labor unions and their leaders probably could be destroyed by the simple expedient of passing legislation making the anti-trust law as applicable to them as it is to business. And why not? Why should not everybody engaged in production or transportation be prohibited from engaging in practices intended to have and having the effect of restraining production, trade or commerce? Why should the three-fourths of the workers of the country who do not belong to labor unions *prohibit themselves* through their government from engaging in such practices, and at the same time through their government authorize the other one-fourth to engage in such practices—especially as the one-fourth use these practices solely to dominate and exploit the three-fourths?

It simply doesn't make sense. Are all the smart people in the labor unions and the three-fourths who are outside the unions such ignoramuses, idiots and cowards that they don't know what is going on, don't know their own selfish interest, don't know how to protect themselves, or are afraid to try to do so?

OUR INSOLVENT HIGHWAY SYSTEM

A lot of people are worried lest the railroads become insolvent. They might put first things first and do their worrying about the insolvency of the nation's highway system against which the railroads are forced to compete. There is no competitor so dangerous as one who is bankrupt and who is, hence, able to do business at less than cost. The Brookings Institution has issued a little book* which, in guarded language, reveals by implication the complete insolvency of the nation's largest single transportation enterprise—that is, the publicly owned system of improved highways.

This monograph might well be subtitled, "A Case Study in Government Planning," because our free, competitive market economy has not been permitted to play any part in the development of our highways—which, instead, are wholly the resultant of pressure-group politics as reflected in the activities of an enormous bureaucracy, bountifully supplied with taxpayers' money. No one can deny that the bureaucracy has builded spectacularly and with sufficient effectiveness to give road room to 40 million vehicles. As for the fact that it has also builded wastefully and improvidently, who could have expected that government, completely freed from obedience to the law of supply and demand, would or could ever do otherwise?

A table in the Brookings book sets forth highway revenues by years from 1921 to 1948 inclusive, showing the proportion of such revenues paid by (1) highway users, (2) federal funds, and (3) other taxpayers. How these ratios have changed is significant:

	Total Highway Revenues	% Pd. by Users	% Federal Funds	% Other Sources
1921.....	$1 billion	11.7	8.0	80.3
1948.....	$3 billion	61.8	12.1	26.1

Here is a mammoth aggregation of capital, used by the American people for automotive transportation, on which in 1948 they spent a total of $30 billion, or more than one-eighth of the national income. This plant is similar in nature to the fixed property of the railroads or of the electric utility industry—but, unlike such privately owned property, the highway plant contributed nothing to general taxation;

*"Automotive Transportation—Trends and Problems," by Wilfred Owen. Published by the Brookings Institution, Washington, D.C. Price, $2.

instead, as the table indicates, it *consumed* $750 million of general tax funds, not counting the contribution of the federal government.

A little figuring from the items the author sets out in this one table is pretty revealing. Three billion dollars were spent for highways in 1948, of which users paid only $1.86 billion, leaving a deficit of $1.14 to be paid by other taxpayers. (If it be objected that the federal contribution is offset by federal excise taxes on automotive products and fuel, then be it remembered that the federal government collects excise taxes from other transportation for which no *quid pro quo* is returned.) Furthermore, the huge investment in highway plant yielded no *ad valorem* taxes. The highway system, upon which upwards of $50 billion has been spent since 1921 alone, must easily represent a value at least twice that of the depreciated value of railway fixed property. If this highway property were to yield taxes the way railway property is required to do, it would certainly have been looked to for $400 million of net tax revenue, which may be added to the $1.14 billion by which the highway system failed in 1948 to pay its way—thus bringing to *a total of $1.5 billion the deficit of the highway system in 1948 alone*, when compared to transportation property in private ownership.

These calculations, it should be understood, are this paper's—not those of the author of the Brookings study. He is, on the contrary, not much worried by the failure of highway users to pay their way. What does worry him is the fact that 53 per cent of the present "highway dollar" has to be spent to maintain existing highways, leaving only 47 per cent for new construction. Meantime, new highways are not being built nearly fast enough to meet the "demand," and congestion is resulting; and will become rapidly worse unless highway revenues are increased.

The average motorist now pays only 0.4 cent per mile toward highway costs—which is 10 per cent of the pre-war cost of automobile operation and only 5 per cent of present cost. The author argues that the motorist could afford a large increase in his fees for highway use, without paying any more percentagewise than he did in 1941; and the cost of automobile operation is so much less on modern roads than on antiquated ones that the motorist would be money in pocket by paying more for using the roads, because more modern roads would save him more than enough in fuel and maintenance expenses to offset his increased payments.

As already indicated, this Brookings study does not propose to go very far toward taking highway transportation out of the realm of politics and putting it wholly under the dominion of economics, where all economic activity obviously belongs. Nevertheless, the analysis does blaze a little path in that desirable direction, which is more than any similar statement from such a responsible and independent source has ever done before. It is, perhaps, of additional significance that, although the inquiry was undertaken with the "generous cooperation" of the staff of the Public Roads Administration and of "representatives of the various automotive industries," nevertheless toll financing—heretofore anathema to these "cooperators"—is viewed in the study with tolerance, even if with no enthusiasm.

40-HR. WEEK SHOULD BRING MORE SIGNALING CONSTRUCTION

Various signaling projects, including grade crossing protection, which may have been held in abeyance because they could not be fully justified economically by the savings to be accomplished under wage rates heretofore prevailing, might be profitably reviewed now on the basis of labor costs under the 40-hr. week.

As calculated on one large railroad, operating expenses for a continuously-open block office or an outlying interlocking, including wages for operators or levermen, as well as building maintenance, and other incidentals, may total about $15,000 annually. The total wages will depend somewhat on the rate which applies and on whether relief schedules are to be filled entirely on straight time or partly on overtime. With due regard to available cash and other financial factors, some railroads may calculate that an annual saving of $15,000 will justify an expenditure of $75,000 to $100,000 or more; and one large road has set $120,000 as this figure. With these considerations in mind, many railroads are now investigating—and other roads could well afford to investigate — all opportunities to install signaling facilities, such as centralized traffic control or remote control of outlying interlockings, which will permit the closing of open offices or interlocking towers.

Also at railroad grade crossings with streets or highways—where watchmen or gatemen are now on duty one, two or three tricks every day—the increased labor costs under the 40-hr. week may warrant larger expenditures for installation of automatically-controlled flashing-light signals and electrically-operated gates. A further advantage of such installations is the increased safety afforded by uniform protection in service 24 hr. every day of the week.

Thus, the problem of increased operating expenses due to the 40-hr. week can be solved in part by applying modern signaling which can be controlled automatically, or remotely from some office that must remain open for other purposes. And in most cases this will result also in improved operation and safety.

IS FURTHER

Transportation is vital both in peace and in war, yet we are converting more and more railroad motive power to liquid fuel. By doing this we are putting more and more eggs in one basket. In a national emergency we need all the liquid fuel we can get for army, navy, and air force. Aircraft, in particular, require the highest grades of fuel and no reasonable substitutes are yet available. However, our railroad transportation system is more flexible from a fuel standpoint, since steam locomotives can readily use coal, a mineral fuel, which, according to the best authorities, is available at the present rate of consumption for hundreds of years to come.

Why, then, is it not worth time and effort to keep our railroads coal burning?

One answer is to convert coal to liquid fuel by processes such as the hydrogenation of coal. This is entirely feasible and, at the present time, several test plants are in operation and under consideration, but their initial cost is very high and, in emergencies, their whole output would have to be reserved for the military. Also, such plants would have to be large to make them economically feasible; hence, they would be few in number and not too well dispersed. Therefore, it would not be too difficult to put them out of operation.

The preferable alternative is to use the coal in its natural state. If it is agreed that this would be preferable, the problem is to make the steam locomotive attractive to the railroads.

Recently the New York Central conducted the first full-scale comparative tests between the steam locomotive and the Diesel. They used half modern steam locomotives and half Diesels over the same routes, giving both types adequate maintenance and service facilities. The final cost of operation figures quoted by P. W. Kiefer, chief engineer equipment, New York Central System, in the August 23, 1947, issue of the *Railway Age*, show that a 6,000-hp. reciprocating steam locomotive costs less to operate per mile than would a 6,000-hp. Diesel.

Increasing Steam Efficiency

Until the advent of the Diesel neither railroads nor locomotive manufacturers had sufficient incentive to break away from conventional designs with a view toward increasing efficiency, but, today, with the stiff competition of Diesel engines and the high cost of fuels, the need for a new approach to the problem is imperative.

In the field of electric power generation, steam is still undisputedly the most economical prime mover in sizes over about 8,000 kw. and on board ships of about 5,000 hp. and larger. These power plants consume only about 6 to 8 lb. of steam per horsepower hour, yet the average locomotive requires 20 lb. or better of steam per horsepower hour. The best is about 15 lb., three times as much as other power plants.

The present-day locomotive is a highly efficient engine considering the limitations presently imposed on it. Therefore, it is necessary to lift or circumvent these limitations.

To increase the efficiency of the steam locomotive to emulate steam power-plant practice, it is necessary to increase the temperature and pressure of the steam to the engine, decrease exhaust pressures, utilize the steam to better advantage, increase feedwater temperatures without decreasing heat available for work, and decrease steam used in auxiliaries, which is very high and a dead loss on present locomotives.

Steam pressures cannot be increased by any appreciable amount over current practice with the fire-tube boiler. The water-tube type boiler, however, is giving excellent service in power plants and on board ship at pressures from 600 lb. per sq. in. to well over 1,250 lb. per sq. in.

A fire-tube type locomotive boiler has been proposed for high pressures, using a water-tube firebox and throat, thus eliminating staybolt surfaces. Although it is a step in the right direction, it represents unnecessary compromises with good water-tube practice, such as allowing the main drums to be exposed directly to the fire, and the use of bifurcated tubes, etc. The more satisfactory answer is a full-fledged water-tube boiler designed along the latest approved practices.

Water-Tube Boilers

There are four types of water-tube boilers—the flash boiler, the semiflash boiler, the natural circulation boiler, and the forced-circulation boiler.

The flash and semiflash boilers are ideal in many respects, especially from a theoretical standpoint. However, they still present many problems not found in the conventional water-tube boiler. These have not been entirely solved.

Natural circulation water-tube boilers have not been used on locomotives except experimentally. By the nature of their design they are rectangular and, hence, difficult to conform to standard locomotive limitations. Therefore, two things have to be done. First, more vertical space has to be made on the locomotive without impairing wheel arrangement, and, second the height of a water-tube boiler decreased.

One possible solution to available height is taking a wheel arrangement similar to the Pennsylvania four-cylinder rigid-frame 4-4-4-4, or the Baltimore & Ohio 4-4-4-4 rigid-frame engines and separating the frame in the middle and tying the two sets of drivers together by a third frame with a drop center which would support a water-tube boiler. This arrangement would have further advantages, such as better distribution of weight on the drivers, better flexibility on curves, and, in the case of the reciprocating engine, less reciprocating weight and more room for ash pans.

This double articulated arrangement is used in the English colonies, except that they use a conventional boiler and do not utilize the space between the drivers, the boiler itself acting as the tie frame. An example is the general purpose Beyer-Garratt 4-6-4+4-6-4 used

STEAM DEVELOPMENT PRACTICAL?

With forced-circulation water-tube steam generators and uniflow or turbine prime movers, the author believes that it is

By CHADWELL O'CONNOR*

on the Gwelo-Salisbury section of the Rhodesia main line. The new Chesapeake & Ohio turbo-electric locomotive also uses a somewhat similar articulated frame arrangement.

When the height of a water-tube boiler is reduced, the convection or natural circulation is reduced for a given size unit, but, if suitable means of inducing or forcing circulation can be employed, not only can the difference be made up, but heat transfer rates can be increased several times. During the war an experimental high-pressure boiler of this type was developed which consistently produced 1 b. hp. from each square foot of heating surface with a thermal efficiency of 80 per cent.† The unit has all of the advantages of the conventional water-tube boiler plus high heat transfer rates. The firebox is between the upper and lower drums, further reducing the height of the unit and completely enclosing the firebox with water tubes and water walls.

In short, a forced-circulation steam generator of this type would fit the space limitations and allow pressures and temperatures to go as high as metallurgy will allow, which at present is about 1,000 deg. and almost any pressure. However, in the interests of initial cost, standardization of equipment and low maintenance, 600 to 900 lb. per sq. in. pressure and 700 deg. F. for reciprocating engines and 950 deg. for turbines would be the most practical.

Furnace

It is in the burner and furnace that steam has its greatest advantage—the ability to burn cheap fuels. But it is here also that steam has some of its disadvantages—poor combustion efficiency because of poor coal, improper handling, complicated equipment affected by cold weather, and uncontrolled draft, all of which affect adversely clean, economical operation. Ash disposal also presents its problems.

There is only one method of firing which eliminates, or at least simplifies, the aforementioned problems and that is pulverized coal firing. True, pulverized coal adds a few problems of its own, but they have been solved for stationary water-tube boilers. More nearly approximating the locomotive application is the marine field. It was found that with the Clarke-Chapman system low-grade slack coals could be used. After extensive trial runs the system was pronounced a commercial success. The biggest single problem was slagging, but with water walls and proper furnace design the slag fell to the bottom where it was cooled by tubes on the bottom of the furnace floor and drawn off through a special door.

Scotch marine boilers with their small fireboxes have successfully burned pulverized coal with fusion temperatures of the ash as low as 2,264 deg. F. So, with a flexible water-tube boiler design such as is available with forced circulation, a pulverized coal-burning locomotive which would be capable of burning low grades of coal with the simplicity and availability of oil burners is well within our grasp.

In view of the sometimes erratic supply of coal, the pulverized coal burners mentioned above can be built with an oil burner atomizer in the center which may be used as an alternate.

Exhaust Pressure

Better than 10 per cent thermal efficiency is lost by exhausting against 26 lb. per sq. in. as the standard locomotive does to obtain a draft, as against exhausting at atmospheric pressure. With atmospheric exhaust the effective pressure is increased about 9 per cent, thus producing more horsepower for a given size engine.

To replace the exhaust nozzle an induced-draft fan similar to those used on board ship and in stationary power plants should be used. Such a fan can be controlled at will to suit combustion rates. The control should be made automatic to control the excess air to about 20 per cent. This would increase combustion efficiency substantially above present practice, reduce smoke to a negligible quantity, eliminate the human element, and increase availability and utilization.

A single-expansion reciprocating engine is out of the question for real efficiency as now used. It was abandoned over fifty years ago in favor of compound, triple and quadruple expansion for all other services. However, all attempts to use them on rails have been futile for several reasons—high back pressure, low initial pressures, weight, cost of parts, and inflexibility. There is, however, one type of engine which, today,

†Developed and patented by the author.

*Mr. O'Connor is an engineer engaged in steam power plant design on the Pacific coast.

can compete with the turbine and Diesel, namely, the uniflow engine.

A uniflow engine gets full expansion in one cylinder and is more efficient than a quadruple expansion engine. All control is through the valves so that the engine has an almost flat efficiency curve from ¼ to 5/4 load. Poppet valves, currently used, lend themselves to higher temperatures and pressures.

For locomotives nothing could be more perfect—high starting torque, with up to 90 per cent cut-off, which would be cut, as soon as underway, to 10 per cent or less, depending on the load. With this arrangement starting torques would be comparable to that of a Diesel, thermal efficiencies would be twice current reciprocating practice, wire-drawing would be materially reduced, and valve driving gear would be simplified and lightened.

The uniflow engine can utilize high pressures and greatly reduce cylinder condensation. Both Stumpf and Lentz have built uniflow engines that consumed only 5.6 lb. of steam per horsepower operating on about 450 lb. and 800 deg. to 900 deg. Correcting for non-condensing service, this would give about 8 to 10 lb. of steam per horsepower-hour, or about one-half the steam consumption of present-day steam locomotives.

There are two major drawbacks to the reciprocating engine. The steam temperature can not exceed about 800 deg. because lubricating oil breaks down beyond this temperature, and multiplicity of moving parts. Steam turbines can operate continuously year in and year out at pressures above 1,000 lb. and up to 1,000 deg. F. with a corresponding increase in efficiency. They are essentially a vibrationless, one-moving-part machine. By extracting steam from various stages of a turbine and heating feedwater with it, the steam has done work and at the same time returns B.t.u. for B.t.u. back to the boiler in the form of hotter feedwater which materially increases thermal efficiency.

John S. Newton, assistant manager of engineering, Steam Division, Westinghouse Electric Corporation, in his article on Coal-Burning Steam-Turbine Locomotives,* shows steam consumptions of turbines at various horsepowers and pressures. His figures show that the steam consumption of a 4,000- to 5,000-hp. turbine-driven locomotive would be between 45,000 and 55,000 lb. per hr. instead of the usual 100,000 or more required by the reciprocating locomotive. These steam rates are without extraction. With extraction, even lower rates are possible.

Auxiliaries

At boiler pressures of 600 lb. or better, the standard locomotive feedwater procedures are not necessarily applicable. The injector is out because of the high pressure and because of the feedwater heaters necessary for economical operation. Centrifugal pumps require high rotative speeds which dictate a steam turbine or electric drive. Unless the locomotive is turbo-electric, the electric drive would necessitate unnecessary complication. A small turbine drive is not very efficient and the efficiency of a centrifugal pump is also rather low over a wide range. However, a piston type displacement pump has high pumping efficiencies, can handle hot water close to the flash point, and turn at low speeds. To get variable flow to parallel steam flow, it is better to use a type of pump that has a variable stroke so that the driving motor can operate at constant speed. Several manufacturers make this type of pump for shipboard and power-plant use. It operates from zero to full capacity by a simple remote-control device.

It could be driven off the main engine or off a modern, simple, enclosed, pressure-lubricated, reciprocating steam engine operating against sufficient back pressure to utilize its exhaust for feedwater heating above 212 deg., thus saving most of the heat in the steam used for driving the pump.

The auxiliary feedwater pump should be simple, inexpensive, rugged, and foolproof. A direct-acting steam pump meets these conditions. There are several makes of pumps on the market which operate up to 1,000 lb. on the water end and 250 lb. on the steam end which can readily be reduced from the boiler pressure. Since this pump operates only in an emergency, its relatively high steam consumption is unimportant.

Direct-acting steam air compressors are relatively expensive, are very wasteful of steam and increase standby losses. If a standard type of compound air compressor, mass-produced for industrial uses, were driven off the feedwater-pump engine or by an electric motor, much steam could be conserved and cost and maintenance reduced.

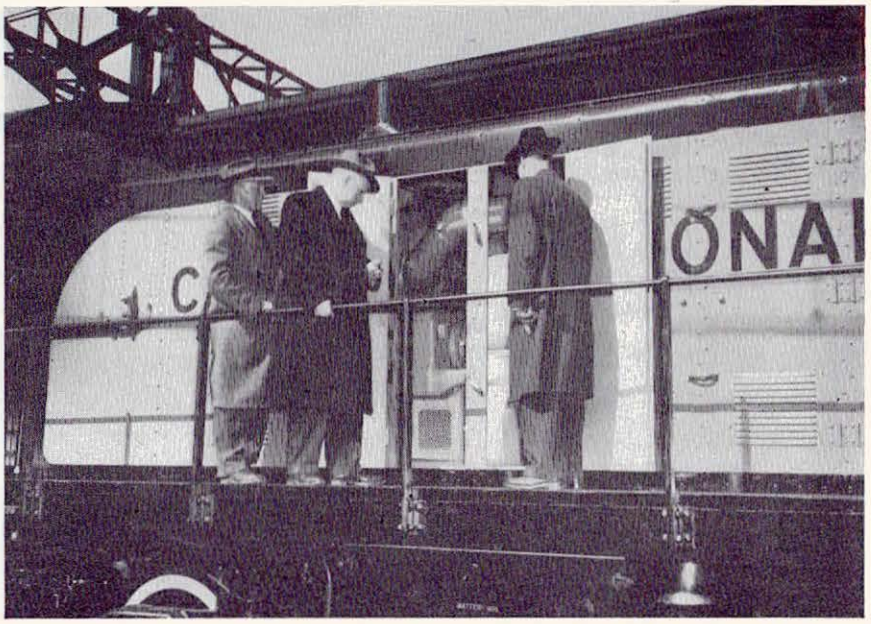
Feedwater heating is important, since it vitally affects the overall thermal efficiency and quality of feedwater.

The first stage of heating up to 212 deg. should be in a thoroughfare, open-spray type deaerating feedwater heater through which the exhaust steam from the main engine passes. Its advantages are the small space required, the fact that it is unaffected by motion, ease of cleaning, ability to bring feedwater up to within 1 deg. F. of steam temperature, deposition of solids, and effective deaeration. The second stage heating would be, of necessity, an induction type closed heater receiving steam from all auxiliaries at a pressure sufficient to condense all the steam (about 50 lb. per sq. in). The remaining stages would be similar to the second stage, except that they would get steam from extraction points on the turbine if used.

The usual flue-gas type of air preheater as used in power plants would be too bulky and costly for locomotive use, but if the exhaust steam, after passing through the feedwater heater, were put through a simple tubular air preheater, many advantages would result. It would be simple, small, devoid of soot problems, would require no moving parts, and, being a thoroughfare type, would not freeze in cold weather since there would always be more steam than is necessary to heat the air. The advantages are increased overall thermal efficiency, increased combustion efficiency, better steaming in cold weather, air to the furnace always at the same temperature, and return of condensate to the makeup water, thus increasing water mileage still further.

The main throttle should be air operated as a function of steam-chest pressure. With such an arrangement the engineman, by turning a small knob or lever, can set the pressure at the engine at any predetermined

*Railway Age, February 14, 1948, page 48.



The first Canadian-built 1,000-hp. Diesel-electric locomotive for the Canadian National was delivered this month by the Montreal Locomotive Works and inspected at Central Station by (left to right): E. J. Feasy, supervisor of Diesel equipment; E. R. Battley, chief of motive power and car equipment, and S. F. Dingle, assistant vice-president operations, who are examining the turbocharger. It was the first of 20 which will replace present steam locomotives on switching duties. The locomotives have a six-cylinder super-charge engine, weigh 115 tons and can be kept in continuous service about 22 and a half hours of each 24

amount. This, in effect, sets torque. As soon as the engine is under way, the throttle would be opened wide and the speed controlled by cut-off alone.

Initial Cost

The initial cost of a locomotive as herein described is difficult to arrive at without a complete detailed analysis. However, the important item to note is that such a locomotive can readily be standardized and mass produced. Like the Diesel, it could be resolved down to speeds of 60, 80, 100, and 120 m.p.h. and horsepowers of 4,000, 6,000, 8,000 and 10,000. Once such a grouping were established, costs could be reduced to match the standard low-pressure steam locomotives which are about half the cost of a Diesel locomotive.

Conclusion

The final decision as to type of drive, arrangement of equipment and wheel arrangement would rest with those men versed on the problems involved. We do know, however, that an efficient engine is now available and, as this article points out, a far superior boiler and burner is within our grasp.

It is also of further interest to compare the locomotive herein described against the list of objections usually associated with the standard reciprocating steam locomotive.

Poor coal.—Pulverized coal burners successfully burn even slack.

Weight per horsepower.—High-pressure water-tube boiler and weight concentrated on drivers all reduce weight per horsepower.

Water stops.—High pressure and proper steam utilization cut water rates in half.

Ash disposal.—No wheels under firebox allows for ample ash pans.

Heating of journals.—Reduced with four cylinders and eliminated by the use of antifriction bearings. No reciprocating journals with turbo-electric drive.

Packing-gland leaks.—Aggravated by high pressure, but poppet valves eliminate valve stem packing and metallic rings for piston rods help. The turbine eliminates this problem.

High center of gravity.—Substantially lowered by the underslung carriage and the water-tube boiler.

Track stress.—Considerably lighter reciprocating parts with four cylinders (two separate sets of drivers). Reduced as low as any other type locomotive with turbine drive either geared or electric.

Servicing en route.—Cut in half or better by halving water and fuel consumption and, in the case of the reciprocating engine, antifriction bearings and reduced reciprocating weight.

Acceleration.—Slow starting overcome in the case of the reciprocating engine by infinitely variable cut-off; turbo-electric comparable to Diesel.

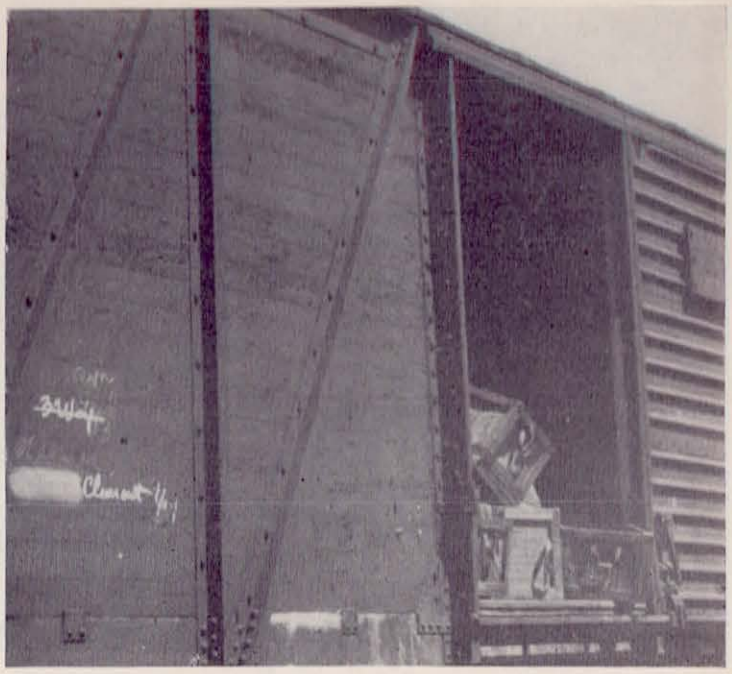
Availability.—Due to use of standard industrial type air compressor, feed pumps, etc., maintenance is reduced and replacement simplified. The water-tube boiler is far simpler, more rugged and far safer even at elevated pressures. (There are no flat surfaces and no drums exposed to hot gases; no stays, etc.)

Cold weather.—The engine, as outlined above, would be enclosed like the Diesel locomotive. This means that all auxiliary equipment is inside and not exposed to excessive cold. The boiler with its induced-draft fan and air preheater would be almost independent of outside temperature.

In short, there is a boiler which fulfills the necessary requirements which, when combined with other available equipment, will produce a vastly superior steam locomotive capable of out-performing all other types of prime mover locomotives and doing it at less cost per mile.

MULTI-MILLION DOLLAR BILL FOR CLEANING

Debris in freight cars—a subject rarely emphasized—may be costing the railroads in excess of $60,000,000 annually



Above left—Contents of this box car—empty containers—left the consignee's siding without shipping orders. Above right—

The cleaning of freight cars released by consignees as empty, but which are actually incompletely unloaded or littered with debris, is costing the railroads far more than is commonly realized. One road which has made careful studies of the situation cleans in excess of 20,000 cars a month, or nearly a quarter of a million cars annually, at an average out-of-pocket cost of about $1.76 a car. This cost is composed principally of labor, and does not include switching and other charges which are hidden in total transportation costs.

Surveys indicate that the time required to repull dirty cars, move cars to cleaning yards or tracks, furnish the necessary labor, and switch and respot cars, amounts to as much as five days, depending on the location and the circumstances. When Saturday becomes an off-day for non-operating employees on September 1, the average time consumed will be greater. If the average time is currently three days, then this road is losing 720,000 car-days a year.

Who's to Blame for Dirty Cars?

The worth of a freight car from the standpoint of the revenue it doesn't earn when it isn't available is highly debatable, but even at the per diem rate of $1.50 a day, this road would incur a cost of $1,180,000. No accurate figures have been worked up on a national basis to determine how many cars are cleaned, or what the cost totals. But assuming that the findings of this one railroad—which has put extra effort into the subject—are representative, by projecting its proportion of cars cleaned to loads originated to a national basis, it is estimated that the total number of railroad cars cleaned is 9,360,000 annually. At an out-of-pocket cost of $1.76 a car, this amounts to $16,473,600. If the per diem rate of $1.50 a day is added—certainly a conservative method for determining the value of cars held out of service—and three days is assumed for the average time lost, the national total gets up to $63,493,600. As pointed out above, "hidden" figures in the general transportation account are not included at all, since no figures separating amounts chargeable to car cleaning are available. But the $63 million figure alone serves to demonstrate the magnitude of the car cleaning problem.

The carriers acknowledge their obligation to furnish cars clean to shippers. Sometimes the roads fall down on the job, despite the big cleaning task they are performing, and many cooperative shippers are spending additional money to ready cars themselves.

The consignee is the party chiefly at fault. Bracing, blocking, paper, empty containers, damaged pieces and all manner of debris are found in cars after they are removed from consignees' sidings or team tracks. "Pulls" are most often made during the night, which lessens the opportunity to detect incompletely unloaded equipment. Besides the cost and car supply factors, release of cars with loose strapping, projecting nails, blocking and debris constitutes a definite hazard to railway employees.

"Housecleaning" by Freight Car

Some of the more outstanding cases show deliberate efforts of consignees to "houseclean" their plants. In several instances where violators have been traced, the consignees' traffic departments were advised and, rather than taking offense, were pleased to be informed that their plant foreman or cleaning forces were misusing railroad equipment to dispose of plant refuse. One road reports that concrete blocks, the largest measuring nearly a yard square, were found in an "empty" hopper car. Removal required a wrecking crane, entailing direct out-of-pocket expenses of $72. Several cases on record show that straw and packing left in cars has been ignited by carelessly disposed cigarettes or by spontaneous combustion, causing complete loss of cars and damage to adjacent property.

When unloaded on a cleaning track, its contents made this formidable pile of rubbish, absolutely worthless to the carrier

Not only consignees misuse empties. One car found full of debris was traced back to the receiver, and investigation developed that several tons of rubbish had been placed in the car by a nearby industry without the consignee's knowledge. Nor are the carriers guiltless. Failure to inspect cars properly before placing for loads adds to the time consumed and the cost of car cleaning. Some cars are made dirty by agents of the carriers, but such cases, checks show, are in the minority and are more readily remedied.

Car-Days Lost

Perhaps some of the reluctance on the part of the railroads to air the dirty car problem has been because of traffic considerations, particularly at competitive points. However, it appears that if shippers and consignees were appraised of the total cost to the carriers because of the failure to complete unloading or the abuse of equipment, it would be manifest to them that these costs are somewhere in freight rates. The sheer magnitude of the *freight claim* bill—$135,000,000 in 1948—has brought about remarkable shipper cooperation in the effort to cut loss and damage. The cost of car cleaning, though less tangible, appears to be almost as severe, and has, in addition, a marked adverse effect on car supply. If receivers of freight had completed unloading and left cars in condition for the next consignee in only *half* of the 1948 failures, based on the projection of one road's experience, there would have been made available approximately 14 million additional freight car-days.

The Association of American Railroads, the National Association of Shippers Advisory Boards and a number of regional shipper advisory boards are getting behind the dirty car problem. A "perfect unloading," or "clean car" campaign which they advocate, could result in immediate and important savings to the carriers, with obvious benefits to shippers and receivers.

Unwanted contents left in cars by consignees are not only costly and time-taking to remove, but are a definite hazard to railway employees

MAY PURCHASES UP FROM APRIL

Buying of manufactured products, exclusive of equipment orders, in first five months 5 per cent above same period last year; expenditures for fuels in year's first rise

The railroads' May buying picture was a mixed one, but overall it showed a slight increase from April, with the total dollar volume reaching $165,606,000. This figure includes equipment orders as well as the invoice value of other materials, supplies and fuels. While purchases of materials and supplies declined slightly from April, equipment orders and expenditures for fuels rose and carried the total for May more than $3 million above April buying. Purchasing of manufactured products, exclusive of equipment orders, in the first five months of 1949 was about 5 per cent above expenditures for similar items in the same period of 1948, and was, incidentally, the greatest amount ever spent for rail, ties and supplies in any like period.

Railroad equipment orders in May included 589 freight cars and 21 Diesel-electric locomotive units. (There were no orders for passenger cars.) The estimated cost of the freight cars is $2,474,000, while the 21 Diesel units will cost in the neighborhood of $2,850,000.

1949 RAILWAY PURCHASES*

	May (000)	Five Month Totals 1949 (000)	Five Month Totals 1948 (000)
Equipment**	$ 5,324	$ 36,240	$ 341,746
Rail	9,723	46,172	37,095
Crossties	8,002	39,176	28,211
Other Material	89,408	475,136	470,702
Total from Manufacturers	$112,457	$596,724	$ 877,754
Fuel	53,149	283,088	343,820
Grand Total	$165,606	$879,812	$1,221,574

* Subject to revision
**Amount placed on order

For the first time in years total inventories took a drop. This decrease was about $8 million. All categories in the *Railway Age* breakdown contributed to this mild reversal on the trend.

MAY* PURCHASES OF MANUFACTURED GOODS (Excl. Equip. & Fuel)

Year	May '49 Compared to Other Mays (000) Amt.	% Change
1943	$66,527	+61
1944	87,044	+23
1945	81,481	+31
1946	81,891	+31
1947	105,379	+ 2
1948	105,076	+ 2
1949	107,133	

Month	May '49 Compared to Other Months '48 and '49 (000) Amt.	% Change
Jan. '48	$102,136	+ 5
Apr. '48	111,691	— 4
Jan. '49	114,528	— 6
Feb. '49	108,941	— 2
Mar. '49	117,411	— 9
Apr. '49	112,471	— 5
May '49	107,133	

Year	Five Month Totals '49 And Other Years (000) Amt.	% Change
1943	$316,980	+77
1944	416,341	+35
1945	403,090	+39
1946	380,213	+47
1947	503,334	+11
1948	536,008	+ 5
1949	560,484	

MAY* PURCHASES OF RAIL

Year	May '49 Compared to Other Mays (000) Amt.	% Change
1943	$4,599	+111
1944	6,188	+ 57
1945	5,184	+ 88
1946	4,968	+ 95
1947	6,972	+ 39
1948	6,841	+ 42
1949	9,723	

Month	May '49 Compared to Other Months '48 and '49 (000) Amt.	% Change
Jan. '48	$7,547	+29
Apr. '48	5,532	+76
Jan. '49	7,359	+32
Feb. '49	8,645	+12
Mar. '49	9,653	+ 1
Apr. '49	10,792	—10
May '49	9,723	

Year	Five Month Totals '49 And Other Years (000) Amt.	% Change
1943	$22,649	+104
1944	32,750	+ 41
1945	29,032	+ 59
1946	20,356	+127
1947	35,271	+ 31
1948	37,095	+ 24
1949	46,172	

MAY* PURCHASES OF CROSSTIES

Year	May '49 Compared to Other Mays (000) Amt.	% Change
1943	$6,758	+18
1944	7,410	+ 8
1945	6,484	+23
1946	7,915	+ 1
1947	8,441	— 5
1948	6,137	+30
1949	8,002	

Month	May '49 Compared to Other Months '48 and '49 (000) Amt.	% Change
Jan. '48	$5,630	+42
Apr. '48	5,940	+35
Jan. '49	7,799	+ 3
Feb. '49	7,029	+14
Mar. '49	8,203	— 2
Apr. '49	8,143	— 2
May '49	8,002	

Year	Five Month Totals '49 And Other Years (000) Amt.	% Change
1943	$28,431	+38
1944	35,095	+12
1945	28,731	+36
1946	35,566	+10
1947	40,107	— 2
1948	28,211	+39
1949	39,176	

*Subject to revision

MAY* PURCHASES OF OTHER MATERIAL

May '49 Compared to Other Mays (000)			May '49 Compared to Other Months '48 and '49 (000)			Five Month Totals '49 And Other Years (000)		
Year	Amt.	% Change	Month	Amt.	% Change	Year	Amt.	% Change
1943	$55,170	+62	Jan. '48	$88,959	+ 1	1943	$265,900	+79
1944	73,446	+22	Apr. '48	100,219	—11	1944	348,496	+36
1945	69,813	+28	Jan. '49	99,370	—10	1945	345,327	+38
1946	69,008	+30	Feb. '49	93,267	— 4	1946	324,291	+47
1947	89,966	— 1	Mar. '49	99,555	—10	1947	427,956	+11
1948	92,098	— 3	Apr. '49	93,536	— 4	1948	470,702	+ 1
1949	89,408		May '49	89,408		1949	475,136	

MAY* PURCHASES OF FUEL

May '49 Compared to Other Mays (000)			May '49 Compared to Other Months '48 and '49 (000)			Five Month Totals '49 And Other Years (000)		
Year	Amt.	% Change	Month	Amt.	% Change	Year	Amt.	% Change
1943	$44,991	+18	Jan. '48	$73,468	—28	1943	$224,082	+26
1944	51,039	+ 4	Apr. '48	58,267	— 9	1944	256,353	+10
1945	48,638	+ 9	Jan. '49	65,076	—18	1945	233,952	+21
1946	30,280	+76	Feb. '49	57,460	— 8	1946	214,151	+32
1947	52,469	+ 1	Mar. '49	57,654	— 8	1947	278,726	+ 2
1948	72,968	—27	Apr. '49	49,749	+ 7	1948	343,820	—18
1949	53,149		May '49	53,149		1949	283,088	

MAY* TOTAL PURCHASES (Excl. Equip.)

May '49 Compared to Other Mays (000)			May '49 Compared to Other Months '48 and '49 (000)			Five Month Totals '49 And Other Years (000)		
Year	Amt.	% Change	Month	Amt.	% Change	Year	Amt.	% Change
1943	$111,518	+44	Jan. '48	$175,604	— 9	1943	$541,062	+56
1944	138,083	+16	Apr. '48	169,958	— 6	1944	672,694	+25
1945	130,119	+23	Jan. '49	179,604	—11	1945	637,042	+32
1946	112,171	+43	Feb. '49	166,401	— 4	1946	594,364	+42
1947	157,848	+ 2	Mar. '49	175,065	— 8	1947	782,060	+ 8
1948	178,044	—10	Apr. '49	162,220	— 1	1948	879,828	— 4
1949	160,282		May '49	160,282		1949	843,572	

MAY* INVENTORIES OF RAIL

May '49 Compared to Other Mays (000)			May '49 Compared to Other Months '48 and '49 (000)		
Year	Amt.	% Change	Month	Amt.	% Change
May 1, 1943	$19,206	+114	Jan. 1, '48	$32,924	+25
1944	23,081	+ 79	Apr. 1, '48	36,572	+13
1945	26,057	+ 58	Jan. 1, '49	33,243	+24
1946	24,119	+ 71	Feb. 1, '49	36,408	+13
1947	26,875	+ 54	Mar. 1, '49	39,054	+ 6
1948	31,911	+ 29	Apr. 1, '49	42,681	— 3
1949	41,264		May 1, '49	41,264	

MAY* INVENTORIES OF CROSSTIES

May '49 Compared to Other Mays (000)			May '49 Compared to Other Months '48 and '49 (000)		
Year	Amt.	% Change	Month	Amt.	% Change
May 1, 1943	$61,016	+67	Jan. 1, '48	$92,300	+10
1944	80,463	+26	Apr. 1, '48	96,782	+ 5
1945	74,792	+36	Jan. 1, '49	94,256	+ 8
1946	77,413	+31	Feb. 1, '49	94,164	+ 8
1947	89,906	+13	Mar. 1, '49	98,833	+ 3
1948	92,711	+10	Apr. 1, '49	101,987	——
1949	101,641		May 1, '49	101,641	

MAY* INVENTORIES OF OTHER MATERIAL

May '49 Compared to Other Mays (000)			May '49 Compared to Other Months '48 and '49 (000)		
Year	Amt.	% Change	Month	Amt.	% Change
May 1, 1943	$373,565	+72	Jan. 1, '48	$560,703	+15
1944	410,113	+57	Apr. 1, '48	587,390	+ 9
1945	448,326	+44	Jan. 1, '49	611,864	+ 5
1946	452,861	+42	Feb. 1, '49	626,423	+ 3
1947	535,071	+20	Mar. 1, '49	636,700	+ 1
1948	603,972	+ 6	Apr. 1, '49	647,641	— 1
1949	642,872		May 1, '49	642,872	

MAY* INVENTORIES OF SCRAP

May '49 Compared to Other Mays (000)			May '49 Compared to Other Months '48 and '49 (000)		
Year	Amt.	% Change	Month	Amt.	% Change
May 1, 1943	$10,105	+77	Jan. 1, '48	$13,225	+36
1944	10,319	+74	Apr. 1, '48	15,783	+14
1945	10,414	+72	Jan. 1, '49	18,849	— 5
1946	10,959	+66	Feb. 1, '49	18,735	— 4
1947	12,766	+40	Mar. 1, '49	18,532	— 3
1948	16,217	+11	Apr. 1, '49	18,872	— 5
1949	17,936		May 1, '49	17,936	

MAY* INVENTORIES OF FUEL

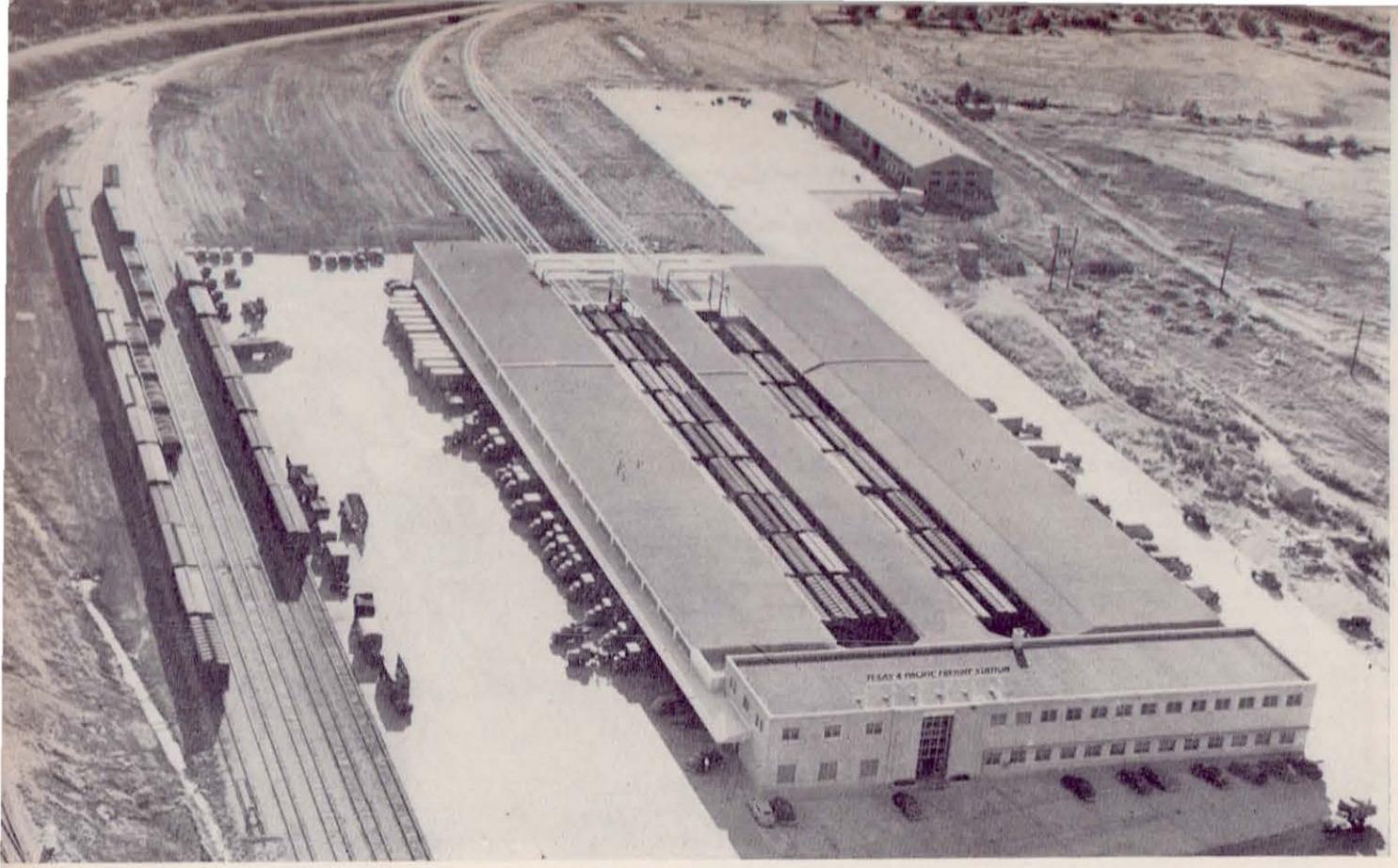
May '49 Compared to Other Mays (000)			May '49 Compared to Other Months '48 and '49 (000)		
Year	Amt.	% Change	Month	Amt.	% Change
May 1, 1943	$55,627	+47	Jan. 1, '48	$66,388	+23
1944	51,320	+59	Apr. 1, '48	64,153	+27
1945	51,236	+59	Jan. 1, '49	96,900	—16
1946	42,918	+90	Feb. 1, '49	91,831	—11
1947	55,973	+46	Mar. 1, '49	88,647	— 8
1948	62,094	+32	Apr. 1, "49	82,014	——
1949	81,686		May 1, '49	81,686	

MAY* TOTAL INVENTORIES†

May '49 Compared to Other Mays (000)			May '49 Compared to Other Months '48 and '49 (000)		
Year	Amt.	% Change	Month	Amt.	% Change
May 1, 1943	$519,519	+70	Jan. 1, '48	$765,540	+16
1944	575,297	+54	Apr. 1, '48	800,680	+11
1945	610,825	+45	Jan. 1, '49	855,112	+ 4
1946	608,270	+46	Feb. 1, '49	867,561	+ 2
1947	720,591	+23	Mar. 1, '49	881,766	——
1948	806,905	+10	Apr. 1, '49	893,195	— 1
1949	885,399		May 1, '49	885,399	

*Subject to revision

†All total inventory figures taken from I.C.C. statement M-125 for the month indicated



Freight Terminal Built for Efficiency

To replace obsolete structure in congested business district at Dallas, Tex., the T.&P. has opened a large highly-mechanized facility directly outside the city

Less-than-carload freight shipped into and out of Dallas, Tex., over the Texas & Pacific is now being handled much faster than formerly, and at greatly reduced cost, as the result of the completion of a $1,500,000 modern, highly-mechanized freight terminal in the Trinity Industrial district directly adjacent to the city. Into this new terminal have gone the latest practices in design, arrangement, equipment and communications, plus some new ideas for speeding up the movement of merchandise across the platforms. The expectation on the railroad is that the new facilities will permit a 30 per cent reduction in the handling time for merchandise, and that the better service rendered to shippers will eventually result in a 100 per cent increase in the company's business at Dallas.

Old Facility Was Inadequate

The new freight terminal replaces the company's old Dallas freighthouse, located in midtown at the corner of Pacific and Griffin streets. Built about 1890, the old structure was no longer adequate in size to handle the company's business in a community that has shown phenomenal growth, but conditions were such that expansion at the old site was out of the question. In its location in the Trinity Industrial district the new freighthouse is only a half mile from the business district, but surrounding conditions are such that future expansion, if necessary, will present no problem.

The Trinity Industrial district occupies an area of 38 acres immediately beyond the westerly limits of Dallas, north of the company's main line and directly east of the Trinity river, from which it is separated by a levee. Title to the land is held by the Eagle Ford Land & Industrial Co., a wholly-owned subsidiary of the T.&P. The district is served by an industrial lead which, connecting with the main line of the T.&P. is owned jointly by that road and the Cotton Belt. Under active development only during the past several years, the district has already attracted a number of sizable industries and others are expected to locate there. The new freight terminal was built and is owned by the Eagle Ford Land & Industrial Co. and is operated by the T.&P. under lease.

A brief description of the road's freight-handling operations at Dallas is necessary to an adequate understanding of the design of the new terminal. Through

Facing page—The extensive yet compact nature of the terminal, the broad paved areas surrounding it, and the location of the garage (background) are among the features that stand out in this aerial view

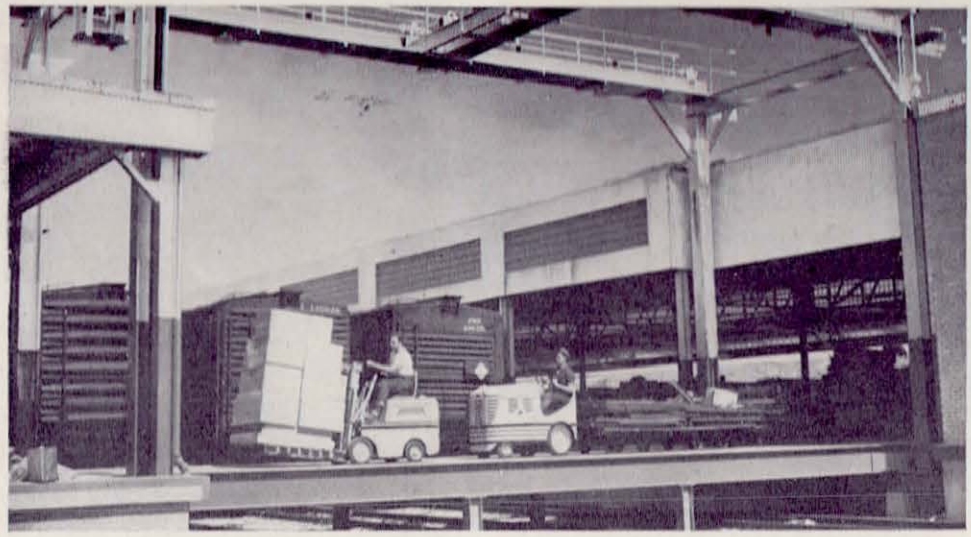
Above—The outbound platform has a clear width of 60 ft. and is long enough to accommodate 45 trucks along the tailboard side (at right)

Right—Office facilities in the headhouse provide pleasant and attractive surroundings for employees

Below—Mechanical equipment at the terminal includes 11 fork-lift trucks

its motor-transport subsidiary, the Texas & Pacific Motor Transport Co., the road operates a pick-up-and-delivery service at Dallas and also a highway trucking business to points on its lines, the latter involving 14 scheduled runs centering at Dallas. For handling the pick-up-and-delivery service the road uses 41 trucks and 5 tractor-trailers. In loading merchandise cars bulkheading is used religiously. For handling perishable merchandise in l.c.l. shipments Porta-Kole units, which use dry ice as the refrigerant, are employed.

Started in the spring of 1948, the new freight terminal was placed in operation on July 5. Its principal elements are a two-story headhouse, or office section, fronting to the east on Industrial boulevard, and, extending westward from the rear of the headhouse, an outbound and an inbound platform, separated by an island trucking platform. The building is surrounded by broad, paved areas and drives, permitting ready



Vertical lift bridges spanning the tracks between the outer ends of the platforms expedite the movement of mechanical equipment

maneuverability for trucks without interference with each other. Directly south of the freighthouse, on the opposite side of a wide paved area, is a group of five tracks, where merchandise may be transferred directly between cars and highway vehicles.

Functions in the Headhouse

Presenting a highly attractive facade on Industrial boulevard and, on the interior, every function and accommodation needed to support the freight-handling operations, the headhouse is 50 ft. wide and 231 ft. long. The first floor is given over almost entirely to office space and other accommodations for the local agent and his staff. There is a private office for the agent and a special agent's office—both overlooking the freight platforms—a large general office, a vault, a record room, a room for valuables, a stationery room, toilet rooms for employees, locker and shower rooms for white freight handlers, an assembly room capable of seating 200 persons, and a heating room.

Features of the interior construction include sheet rubber floor coverings, ceilings of acoustical material in the offices and auditorium, fluorescent lighting, and a forced hot-air heating system in which the fans will be used for ventilation in warm weather until a contemplated cooling system is installed. The toilets have ceramic tile floors, glazed tile wainscoting, Ferrometal partitions for the stalls, and Crane fixtures.

The entire second floor of the headhouse is occupied by the road's stationery department. Provided here are office space for the stationer and his staff, toilet and rest room facilities, a print shop, a reproduction department, a receiving and shipping room, a packing room, and 6,000 sq. ft. of storage area. In addition to stairways the second floor is served by an elevator at the extreme south end. Here, adjacent to the elevator, is a small stationery receiving room at the ground-floor level, which opens onto a small outside loading dock at tailboard height.

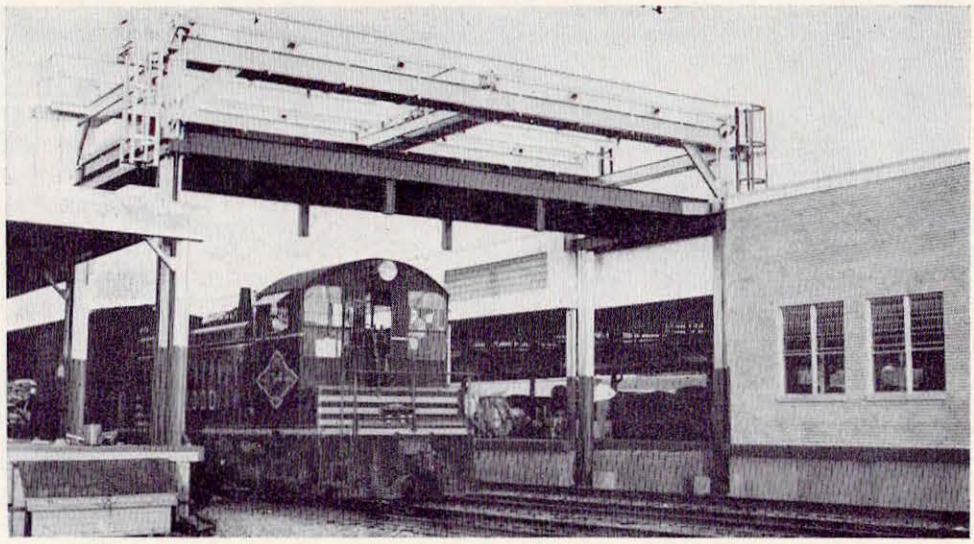
The most prominent architectural feature of the headhouse facade is the main entrance. This prominence was achieved by placing the entrance doorway in a broad vertical band of glass in aluminum sash, extending the height of the building, which is flanked on both sides by a broad pilaster. The southerly portion of the facade, including the pilasters, and the entire south end of the building are finished in Texas limestone, laid up as ashlar masonry. Elsewhere the outside walls of the headhouse are of cream-colored brick, with a base course of ashlar masonry at the north end. To shade the first-floor windows a concrete canopy, or visor, 2½ ft. wide, is provided above these windows on the facade side north of the main entrance, and at the north end. The coping is of native Texas stone.

Mounted atop the headhouse and facing Industrial boulevard is a sign reading "*Texas & Pacific Freight Station*," which consists of frosted-glass neon-illuminated letters, 2½ ft. high, mounted on a steel frame.

The freight-handling platforms, projecting from the rear, or west side, of the headhouse, have a total of nearly 83,000 sq. ft. of floor space. On the south side is the outbound platform, which is a covered platform 60 ft. wide and 544 ft. long. This platform will accommodate 45 trucks along its south side. About midway of the length of the outbound platform is a small enclosure housing offices for the foreman and the truck dispatcher, and toilets for the platform employees. At the extreme outer end of this platform is another enclosed area, 45 ft. by 60 ft., which includes space for repairing and storing platform equipment, and locker and shower rooms for colored employees.

On the north side are the inbound freight-handling facilities. The structure here is 73 ft. wide and 500 ft. long, and includes a warehouse, 58 ft. by 340 ft., flanked by a 12-ft. platform on the track side, and a covered platform at the outer end, which is 72 ft. wide and 160 ft. long. Centrally-located in the warehouse are the foreman's office, a cooperage shop, and toilet rooms for employees.

Between the inbound and outbound facilities is a covered island platform, 30 ft. wide and 500 ft. long, the purpose of which is to help prevent congestion and to impart flexibility to the operations. At the headhouse end all three platforms are connected by a transverse platform, 20 ft. wide. If additional capacity



This lift bridge has been raised to the elevated position to permit a switching movement

should be needed in the future it can be obtained by building extensions at the westerly ends of the platforms.

Between the outbound and island platforms there are three tracks with a capacity for spotting 27 cars. Between the inbound and island platforms there are two tracks with a capacity of 18 cars. The west or outer ends of the platforms are connected by two motor-driven Whiting crossover bridges of the vertical-lift type, which are designed to carry a load of 10 tons per square foot. Track signals and derails protect the bridges when they are in the lowered position. These bridges provide a connecting link over which mechanized equipment can follow an advantageous traffic pattern from platform to platform, avoiding congestion at the west ends of the platforms.

Construction Features of Platforms

The platform floors are of concrete on concrete foundations, and have a ¾-in. compacted wearing surface made with traprock aggregate. Each platform is spanned by transverse steel trusses carrying a roof deck of metal-bound gypsum plank covered by a built-up roof finished with tar and gravel. Extending the length of both the inbound and outbound platforms on the tailboard sides are canopies of corrugated aluminum, with trim of the same material. All the enclosures on the platforms have brick walls. The door openings in both side walls of the inbound warehouse are fitted with wood overhead doors. Five Fairbanks platform scales are provided, three on the outbound platform and two in the inbound warehouse. All the enclosures on the platforms, including the inbound warehouse, are heated by Janitrol unit heaters.

Being located as it is in the flood plain of the Trinity river, the freight terminal is located on soil having a limited bearing value, requiring a foundation of rather unusual design and depth. It consists of circular concrete piers, or shafts, ranging in diameter from 24 in. to 30 in., which are 9 ft. to 14 ft. in depth, and which are belled out at the bottom to diameters of 90 in. to 156 in.

Pneumatic tubes extend from the office in the headhouse to the foremen's offices on the platforms. By means of these tubes, bills of lading handed to the warehouse foreman of the outbound side by truck drivers are transmitted quickly to the billing clerks in the agent's office. Waybills for shipments going out by truck are tubed in the opposite direction. The pneumatic tubes on the outbound side also permit collections for prepaid shipments to be sent to the cashier's office. On the inbound side, freight bills made up here for inbound shipments are tubed to the warehouse foreman who hands them to the drivers. Also, bills signed by consignees and brought back to the freight terminal are handed to the warehouse foreman who puts them through the tubes to the cashier.

An important element in the efficient functioning of the terminal is the intercommunication system which, centering in the agent's office, has talk-back speakers in the foremen's offices on both the inbound and the outbound platforms and also fastened to the lower chords of the trusses at strategic points throughout both platforms.

Design Emphasizes Three Points

In planning the new freight terminal emphasis was placed on three considerations as being of paramount importance in getting maximum efficiency of operation. These are (1) a high degree of mechanization, with standardization of equipment; (2) flexibility of manpower, and (3) simplicity of operation. The first of these is implemented by ten 2,000-lb. "20-24" fork-lift trucks; one 4,000-lb. "40-24" fork-lift truck; one towing tractor with a drawbar pull of 2,000 lb.; 40 four-wheel rubber-tired trailers; 65 semi-live skids with jacks; six steel roller conveyors; three universal barrel trucks, and 1,200 wood pallets to facilitate fork-lift operations.

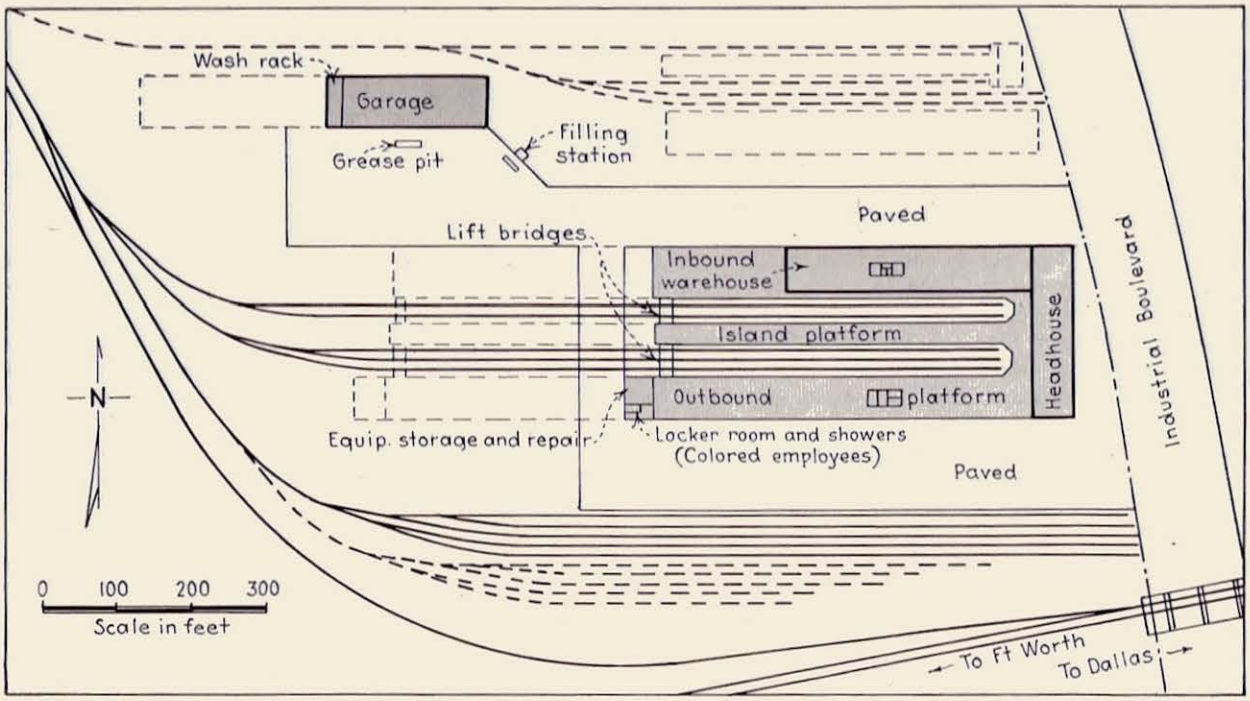
Tractor-drawn trailer trains are used for transporting merchandise distances in excess of 300 ft. Where the distances involved are less the fork-lift trucks are used. At the beginning of each day's work a train of trailers carrying box pallets is operated throughout the

platform area for policing purposes. The equipment is maintained by a full-time repairman who is stationed in the repair shop at the outer end of the outbound platform.

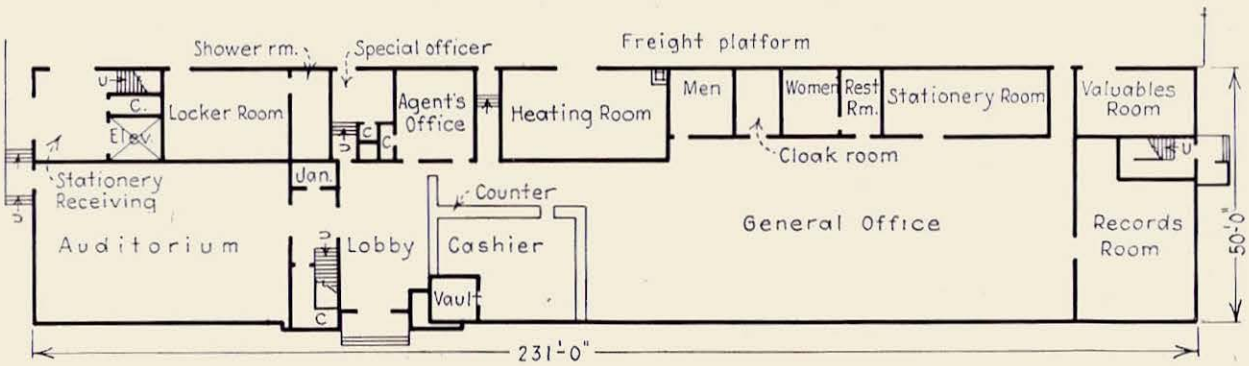
As an efficiency measure all car spots are numbered, and to avoid confusion those for the inbound tracks have odd numbers and those for the outbound tracks have even numbers. On the inbound side the warehouse area is divided into numbered zones corresponding with the car spots, and is also marked off in aisles to permit equipment to move directly across the warehouse from cars to trucks. So that the entire length of the tailboard side of the outbound platform will be available for the unloading of pick-up trucks, over-the-road trucks are loaded along that part of the inbound platform beyond the warehouse, and to this extent the inbound platform is used for outbound purposes.

On the north side of the freight terminal and slightly west of it the road has built a garage for maintaining and servicing the trucks operated by the company's motor-transport subsidiary. Equipped to do all necessary work on the trucks from servicing to heavy repairs, the garage is 60 ft. by 200 ft. in plan and has concrete-block wall, steel roof trusses and cement-asbestos corrugated roofing. The facilities at the garage include a trailer and truck-body shop, a filling station with two gasoline pumps, a greasing pit, and a wash rack housed in a leanto at one end of the garage.

The construction of the new freight terminal was carried out under the general supervision of R. J. Gammie, chief engineer of the Texas & Pacific, assisted by F. D. Danford, assistant to chief engineer, and S. G. Urban, architect. Working from preliminary plans made by the road's engineering department, final plans for the project were drawn by the architectural firm of Wyatt C. Hedrick. J. W. Bateson, Dallas, was the general contractor. W. R. Carr is in charge of the terminal as agent. The mechanized operations and the handling of freight are supervised by W. A. Cowan, supervisor of freight handling and station equipment.



Above—In this plan of the new freight terminal and adjacent facilities the dashed lines indicate possible future extensions and additions. Below—Plan of the first floor of the headhouse. This floor is occupied by the agent and his staff, while the road's stationery department is located on the second floor



1948 RAILROAD CONSTRUCTION INDICES

The Engineering Section of the Interstate Commerce Commission's Bureau of Valuation has issued its Railroad Construction Indices for 1948, showing that last year's overall index for the country as a whole was 281, an increase of 24 points or 9 per cent over 1947's 257, and 49 points over 1946's 232. The 1948 level was the highest in the history of the indices, which are weighted averages based on the 1910-1914 costs as 100.

The indices for the country as a whole (shown in the accompanying table) are broken down in the bureau's compilation into eight regional sets. "The indices," the statement says, "represent territorial index factors and are of value in indicating trends. They are not necessarily applicable for use in the determination of reproduction costs upon individual railroads."

The accounts for which the indices are shown are primary accounts designated in the Classification of Investment in Road and Equipment of Steam Roads. They are as follows:

I—ROAD:

1. Engineering
2½. Other Right of Way Expenditures
3 Grading
5. Tunnels and Subways
6. Bridges, Trestles, and Culverts
7. Elevated Structures
8. Ties
9. Rails
10. Other Track Material
11. Balllast
12. Tracklaying and Surfacing
13. Fences, Snowsheds, and Signs
16. Station and Office Buildings
17. Roadway Buildings
18. Water Stations
19. Fuel Stations
20. Shops and Engine Houses
21. Grain Elevators
22. Storage Warehouses
23. Wharves and Docks
24. Coal and Ore Wharves
26. Telegraph and Telephone Lines
27. Signals and Interlockers
29. Power Plants
31. Power Transmission Systems
35. Miscellaneous Structures
37. Roadway Machines
38. Roadway Small Tools
39. Public Improvements—Construction
44. Shop Machinery
45. Power Plant Machinery

II—EQUIPMENT:

51. Steam Locomotives
52. Other Locomotives
53. Freight-Train Cars
54. Passenger-Train Cars
56. Floating Equipment
57. Work Equipment
58. Miscellaneous Equipment

III—GENERAL EXPENDITURES:

71. Organization Expenses
72. General Officers and Clerks
73. Law
74. Stationery and Printing
75. Taxes
76. Interest During Construction
77. Other Expenditures—General

REGIONS I TO VII, INCLUSIVE

Tabulation of Indices by Years and by Accounts Applicable to the Entire United States

Acct.	Per Cent	1915	'16	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	'41	'42	'43	'44	'45	'46	'47	'48
ROAD																																			
1	2.83	101	110	134	159	178	214	175	157	171	171	166	166	164	161	160	152	143	131	127	131	131	133	142	138	137	140	151	175	186	187	197	216	245	271
2½	....	104	107	127	151	172	198	161	154	168	165	161	159	156	155	155	151	143	121	117	127	132	132	141	137	135	134	145	174	185	190	201	236	238	261
3	18.19	100	110	130	165	190	250	170	143	160	164	149	153	143	135	133	123	118	106	98	100	101	99	103	93	90	90	99	135	142	143	144	148	154	159
5	1.51	103	109	128	150	183	208	179	165	179	179	179	178	169	155	155	143	130	119	111	122	120	130	139	141	140	149	160	192	223	219	236	260	304	337
6	9.41	105	111	146	162	178	206	165	160	176	173	171	170	168	164	163	150	134	122	122	136	135	141	155	150	149	156	174	210	227	222	240	272	327	367
7	0.04	102	124	169	177	184	210	150	153	173	171	168	165	163	163	162	154	144	129	122	136	136	137	158	150	149	159	175	209	236	231	249	284	346	377
8	5.58	100	100	112	133	170	201	189	157	177	175	172	173	175	176	175	170	155	144	139	149	147	150	159	154	158	164	181	199	228	234	241	252	270	298
9	8.57	101	106	121	148	152	168	158	144	145	145	144	144	144	144	144	144	144	140	134	123	123	124	143	139	136	138	139	144	144	146	152	165	210	244
10	3.39	99	129	198	210	203	209	192	161	182	179	177	177	177	177	170	169	165	163	158	150	147	150	169	169	167	167	170	175	173	172	176	190	217	266
11	4.09	103	107	114	140	150	207	191	176	175	175	174	175	176	176	176	168	159	146	146	141	139	140	143	143	143	143	153	170	175	175	181	194	207	235
12	4.35	100	100	130	163	175	218	174	165	188	188	188	188	188	188	188	188	182	175	164	157	159	165	165	169	167	165	165	178	209	241	252	273	298	336	366
13	0.65	100	120	138	174	193	211	192	179	183	183	180	178	179	179	177	175	168	147	135	140	140	138	145	145	141	141	150	168	179	179	189	206	242	271
16	4.42	101	115	135	154	185	215	192	180	194	193	188	184	189	188	187	182	165	141	145	151	151	157	166	166	166	177	188	208	219	227	244	291	333	364
17	0.51	100	115	136	156	175	216	192	178	196	196	189	187	192	191	190	186	166	140	145	150	150	150	162	162	162	177	186	206	226	237	258	307	341	380
18	0.82	101	120	159	170	191	213	185	178	187	187	186	182	185	186	184	177	161	147	151	155	155	156	166	166	166	172	185	195	208	214	227	249	286	325
19	0.26	101	120	153	160	190	212	181	166	185	185	182	180	183	183	183	174	159	144	149	154	154	153	159	159	159	163	187	205	216	222	242	270	324	357
20	2.16	102	118	141	159	188	216	191	180	193	192	188	185	189	188	187	176	161	137	142	147	147	155	165	165	165	176	188	204	216	223	248	294	336	372
21	0.09	100	110	128	150	185	214	190	184	197	197	193	190	195	193	193	182	165	137	142	147	147	156	164	164	164	166	200	208	213	217	236	281	321	367
22	0.04	100	115	135	155	185	210	193	178	198	198	193	189	193	191	191	184	165	137	142	147	147	154	166	166	166	176	195	207	218	226	253	300	340	369
23	0.53	100	114	133	152	178	204	167	158	175	175	174	177	178	178	178	172	158	136	141	146	146	149	153	153	153	161	167	212	226	234	255	291	328	346
24	0.44	101	117	145	155	184	204	170	159	176	176	174	174	176	176	176	172	157	136	142	147	147	151	153	153	153	160	185	199	211	215	236	278	309	338
26	0.34	103	124	147	158	164	192	191	162	187	179	163	157	163	165	165	150	138	121	119	124	128	131	135	129	129	134	143	156	165	165	173	192	239	251
27	1.58	94	106	132	152	165	175	163	158	165	164	162	169	158	155	154	147	138	130	130	133	136	138	143	143	143	146	156	165	176	176	176	199	212	219
29	0.16	104	122	141	158	189	218	197	184	196	196	191	186	191	191	189	177	162	138	143	148	148	152	167	167	167	176	194	204	213	219	246	296	354	375
31	0.61	109	145	174	189	190	207	175	164	180	174	175	176	176	179	183	175	149	143	143	147	149	150	154	148	148	153	162	167	171	171	180	201	240	258
35	0.04	101	117	137	156	186	217	192	179	195	195	190	186	191	190	189	182	164	141	146	151	151	154	161	161	161	168	178	183	198	208	229	290	333	372
37	0.08	105	113	127	146	158	170	162	149	151	151	151	151	151	149	148	147	144	138	138	147	147	147	161	153	154	158	169	169	187	187	187	222	244	267
38	0.05	100	100	179	179	184	202	181	170	173	185	190	190	191	191	190	160	155	155	150	150	150	160	170	180	180	180	190	200	200	200	200	245	280	310
39	1.07	104	108	137	161	182	208	171	164	178	175	171	169	166	165	165	161	153	131	127	139	137	139	152	145	142	146	163	198	208	203	217	236	278	316
44	0.95	115	126	155	192	200	210	198	173	183	185	185	186	187	189	191	176	166	155	155	179	179	179	198	200	202	212	224	224	228	236	236	271	300	319
45	0.33	115	126	155	192	200	210	198	173	183	185	185	186	187	189	191	176	166	155	155	168	166	171	180	177	180	189	194	194	190	190	191	217	240	240
Weighted Average																																			
1–45	73.09	101	110	134	159	178	214	175	157	171	171	166	166	164	161	160	152	143	131	127	131	131	133	142	138	137	140	151	175	186	187	197	216	245	271
EQUIPMENT																																			
51	3.81	86	102	145	189	202	248	192	179	197	185	171	191	190	179	188	194	184	168	166	176	188	188	201	201	201	215	230	255	265	265	265	290	313	326
52	1.71	100	117	137	184	184	217	197	196	198	199	192	194	202	203	221	221	210	175	165	185	190	190	198	199	190	190	203	185	173	173	173	185	189	192
53	11.22	101	148	183	243	267	284	184	156	200	179	171	163	178	169	185	181	161	144	144	165	177	180	191	190	198	204	218	239	254	254	254	300	320	343
54	2.16	89	104	132	164	197	213	169	152	192	187	183	189	191	180	183	181	178	161	161	173	182	182	195	195	194	200	213	230	240	240	240	285	305	327
56	0.48	107	125	164	227	245	239	200	175	170	170	170	170	170	170	170	165	158	148	148	158	160	160	171	171	171	176	188	207	220	229	238	256	275	280
57	0.56	96	128	165	225	244	263	193	168	203	183	188	180	192	184	195	191	178	165	165	177	180	180	197	197	200	208	220	247	254	254	254	292	315	338
58	....	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	150	155	165
Wtd. Ave.																																			
51–58	19.94	96	130	166	219	240	265	185	163	198	182	173	174	183	174	186	185	170	153	153	169	180	181	195	194	198	206	220	242	254	255	255	294	305	323
GENERAL EXPENDITURES																																			
71–75 & 77	0.89	101	110	134	159	178	214	175	157	171	171	166	166	164	161	160	152	143	131	127	131	131	133	142	138	137	140	151	175	186	187	197	216	245	271
76	6.08	102	111	135	161	181	216	176	158	172	172	167	167	165	162	161	153	144	132	128	132	132	134	143	139	138	141	152	176	187	188	198	217	246	272
Wtd. Ave.																																			
71–77	6.97	102	111	135	161	181	216	176	158	172	172	167	167	165	162	161	153	144	132	128	132	132	134	143	139	138	141	152	176	187	188	198	217	246	272
SUMMARY																																			
1–45	73.09	101	110	134	159	178	214	175	157	171	171	166	166	164	161	160	152	143	131	127	131	131	133	142	138	137	140	151	175	186	187	197	216	245	271
51–58	19.94	96	130	166	219	240	265	185	163	198	182	173	174	183	174	186	185	170	153	153	169	180	181	195	194	198	206	220	242	254	255	255	294	305	323
71–77	6.97	102	111	135	161	181	216	176	158	172	172	167	167	165	162	161	153	144	132	128	132	132	134	143	139	138	141	152	176	187	188	198	217	246	272
Wtd. Ave.																																			
1–77	100	100	115	142	173	193	226	177	159	177	174	168	168	169	164	166	160	149	136	133	140	142	143	153	149	149	153	165	188	200	201	209	232	257	281

This large fiberboard plant was brought to Macon, Ga., by the C. of Ga., industrial department

Central of Georgia Alert for New Industries

Expanded industrial department has induced hundreds of large and small plants to locate along its lines since the war

Childersburg, Ala., was a village of some 400 inhabitants before the war. During hostilities, under the impetus of a $100 million powder plant built by the government, the population rose to nearly 30,000. The huge plant was closed down in 1945 and Childersburg, in all probability, would have returned to its former somnolent condition, with a large white elephant on its hands, save for the wide-awake industrial department of the Central of Georgia. A campaign to find industries which might profit by peacetime use of wartime facilities was undertaken, with the result that, when construction now under way is completed, Childersburg will have a $30 million newsprint plant; a $20 million rayon plant, and a $2 million acid plant. Negotiations for other large plants there are now in progress.

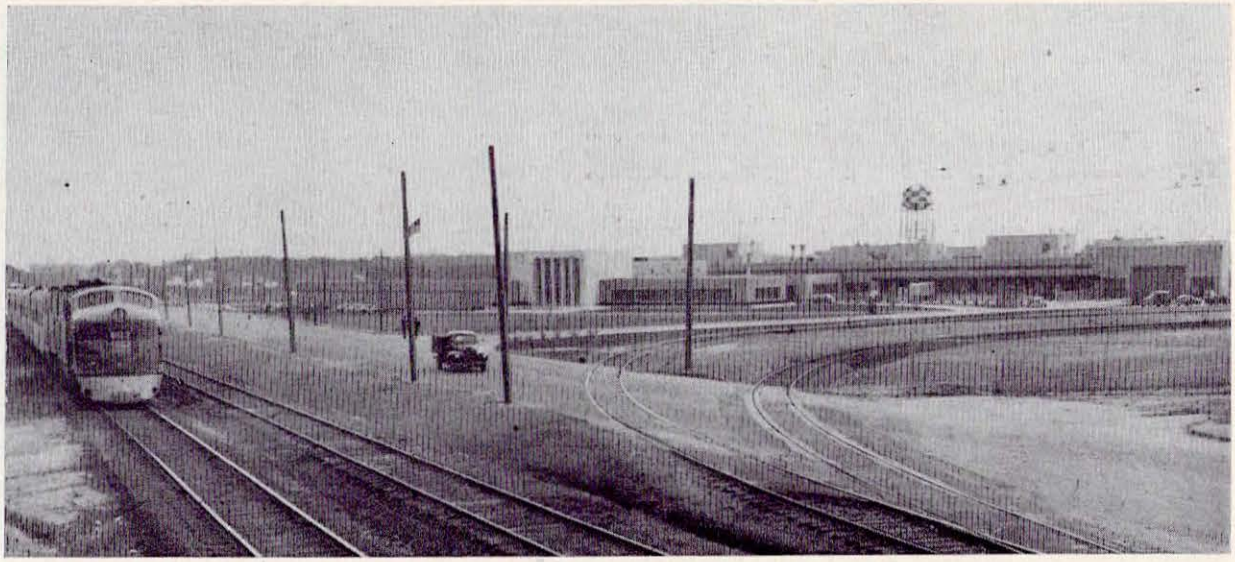
Hapeville, Ga., was just a village until the C. of Ga. induced Ford to built a mammoth assembly plant there. This plant, which distributes automobiles throughout the Southeast, employs thousands of people. It has transformed Hapeville to a thriving industrial community.

How It Was Done

In getting these huge projects located on its line, the railway has not overlooked smaller manufacturing and distributing establishments. Since the war more than 670 new or expanded industries have been located on the Central of Georgia, an important factor in recent increases in the proportion of the road's total traffic originating on the line.

The C. of Ga. had maintained a small industrial department for many years, but, with the advent of the war, the staff of one industrial agent and a stenographer was far too small to accommodate the numerous war industries that were springing up along the line and the staff was gradually increased. At the end of the war, instead of breaking up the staff, its activities were expanded and efforts were concentrated upon securing permanent postwar industries. While the railway's general offices are at Savannah, the industrial department has headquarters in Atlanta, a more central point and a city that is a veritable beehive of new industry. The department is headed by a vice-president and includes a general industrial agent, two industrial agents, an industrial representative, and a full-time industrial consultant. It also includes a staff engineer, who devotes his full time to the engineering problems involved in industrial development.

In the past two years, the staff has prepared industrial surveys of all cities and important towns, as well as many of the smaller towns, served by the road. In addition, special studies of site locations have been made for several industries, the pulp and paper industry being one example. These surveys are more specific, giving details as to water supply, power, fuel,



A C. of Ga. streamliner passes the new Ford assembly plant at Hapeville, Ga.

taxes, markets, raw materials available nearby, labor supply, desirable sites, and a variety of other pertinent information that enables newcomers to save much time in determining whether and where to start new plant construction.

To facilitate industrial development, the railway has bought numerous properties suitable for new plants. The largest is located in rapidly growing Atlanta, within five miles of the downtown district. Here the railway is developing 170 acres adjacent to its tracks. The terrain in Atlanta is quite rough and this acreage, like almost all sites in that city, was quite hilly. However, by means of a million yards of excavation and attendant filling of hollows, an attractive, level site has been developed, of which sizable plots have already been purchased by three different companies. This particular development was begun only a short time ago, but in other locations in Atlanta, the C. of Ga. has secured its share of the hundreds of new industries that have poured into that city since the war.

A survey of the industrial possibilities of Macon, Ga., revealed excellent opportunities there and, by calling attention to them, the C. of Ga. has been able to attract a variety of plants to that city, a hub from which four main and secondary lines of the railway radiate. Among Macon's new industries are a paint plant, a margarine plant, an edible oil refinery, a fiberboard plant, a paper mill, a chemical plant and a paper box mill, as well as numerous distributing warehouses.

Columbus, Ga., and adjacent cities already had numerous textile mills and, since the war, a number of these mills have been expanded and new mills have been built. At the new town of Yates, Ga., on the line between Columbus and Atlanta, a new $43 million steam generating plant, reputedly the largest south of Philadelphia, is under construction.

Besides supplying site data, the Central of Georgia has been of assistance to industry in other ways—the glass and ceramics industries supplying examples. Georgia clay, of which there is a virtually inexhaustible supply, had previously attracted some glass and ceramic plants. Silica of the proper kind is also to be found in the southern part of the state. However, the development of the glass and ceramic industries in Georgia was being handicapped by the lack of feldspar, another vital ingredient, the closet known deposits being in North Carolina, some 200 mi. distant. The industrial department conducted a search for feldspar in Georgia and, in 1948, found large deposits near Monticello on the Macon-Atlanta line. The availability of feldspar so close at hand has already induced new glass and ceramic plants to locate on the C. of Ga., with others in prospect.

Black Ink for Branches

In the office of the vice-president in charge of industrial development is a map studded with varicolored pins—670 of them in all. A duplicate of this map is in the office of the president of the railway, who, prior to his election to that position in 1948, was, among other things in direct charge of development and who still follows such activities closely. These maps have large clusters of pins, each representing a new or expanded plant around communities on the railway Significantly, these pin clusters are not confined entirely to the larger centers.

The line on the map indicating the Andalusia branch between Columbus, Ga., and Andalusia, Ala., 138 mi., shows a number of these pins throughout its length, and in this respect is typical of other C. of Ga. branches. Much effort has been expanded in the promotion of industries on the branch lines, with the realization that the location of even two or three small industries on a branch may well mean the difference between black and red figures for operation of the tributary trackage.

H. C. MURPHY TO BECOME NEW BURLINGTON PRESIDENT

H. C. Murphy

At a directors' meeting on July 29, Harry C. Murphy was elected president of the Chicago, Burlington & Quincy to succeed Ralph Budd when Mr. Budd retires on August 31.

It is expected that Mr. Murphy also will be elected to succeed Mr. Budd in heading up the Colorado & Southern, the Fort Worth & Denver City and the Wichita Valley, which, together with the C. B. & Q., form the 11,000-mi. Burlington Lines. Mr. Murphy has served since August, 1945, as vice-president (operation) and has been in the service of the Burlington since 1914.

Mr. Murphy is known and respected systemwide over the 14-state Burlington, and he, in turn, knows and respects the men who make up his railroad. In his 35 years with the road, he has been located on practically every division. He knows the extensive C. B. & Q. like a postman knows his daily route. The Burlington "is fortunate," Ralph Budd says, "to have a man available who has been on the property so long and knows the property so thoroughly. He will make a fine chief executive."

Thirty-five Years with the "Q"

Mr. Murphy was born at Canton, Ill., along the Beardstown division of the Burlington, in 1892, the son of Frank E. and Margaret Yaco Murphy. At the age of six, his family moved to Eldora, Iowa, where he attended grade and high school. From 1912 to 1915 he studied civil and mechanical engineering at Iowa State College, Ames, Iowa, and in 1916 he attended Armour Institute of Technology at Chicago. While attending school he got his railroad indoctrination, working nights and during vacations for the Iowa Central (now Minneapolis & St. Louis) as a section laborer, station helper, and agent. During his summer vacation of 1914 he entered the service of the Chicago, Burlington & Quincy as a clerk in the accounting department. He soon transferred to the engineering department as a rodman, and advanced to draftsman, transitman, engineer of construction, assistant engineer and division engineer.

During World War I he served as an Army air service pilot. Upon his discharge as a lieutenant in 1919, he returned to the "Q" as division engineer at Centralia, Ill., beginning the "tour" which gave him such a thorough knowledge of the Burlington's physical plant, and such broad acquaintance with its personnel. In the capacities of engineer maintenance of way, or assistant superintendent, he served at Kansas City, Alliance, Neb., Galesburg, Ill., and Lincoln, Neb., respectively. He served as division superintendent at Centerville, Ia., Alliance, LaCrosse, Wis., and McCook, Neb.

First System Post in 1935

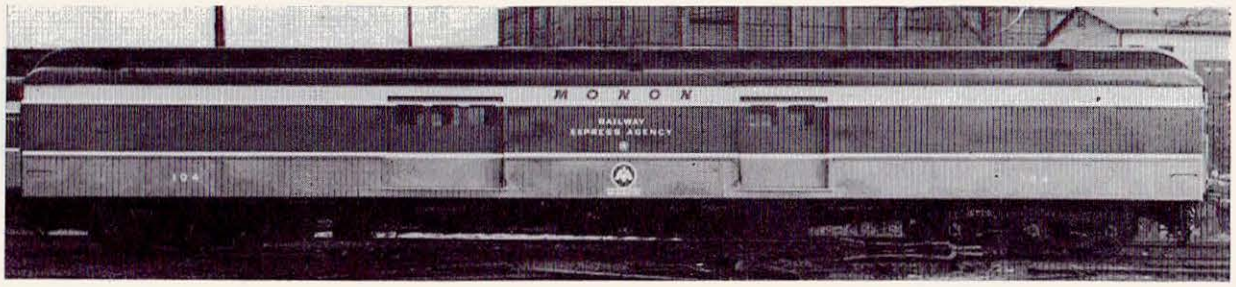
In 1935 he was appointed to his first system post—superintendent of safety—with headquarters at Chicago. In 1936 he was promoted to assistant to executive vice-president, and in 1939 he was appointed assistant vice-president (operation), succeeding Fred G. Gurley, who left that position to become vice-president, and later president, of the Atchison, Topeka & Santa Fe. On August 1, 1945, Mr. Murphy became vice-president (operation) of the Burlington.

Associates describe Mr. Murphy as ever busy applying his skill and talent as a railroadman. On the road he is "up with the birds" and at the rear of his car so as to get a look at the railroad. After dark and long into the night he is still there, with the track lights trained on the right-of-way. Mr. Murphy has no hobbies, per se. When he isn't railroading he is devoting himself to his wife and three children at their home in Aurora, Ill.

The Diesel and the streamlined train were born during the span of Mr. Murphy's railroad career, and each matured on the C. B. & Q. "proving ground." He made early studies on the assignments of Diesel motive power, and is credited particularly for his efforts in the application of the Diesel to freight service.

As a boy Harry Murphy wanted to be a locomotive engineer. He never got to run an engine, but on September 1 he takes over the throttle of the whole Burlington system. Much of his success his associates attribute to his concentration on the fulfillment of the immediate job before him—an inevitable course toward bigger jobs and greater accomplishments, and a good old American custom.

A sketch of Mr. Budd's career will appear in *Railway Age* for September 4.



Monon baggage car converted from a Pullman tourist car

Monon Converts Tourist Car To Baggage Car

Early this year, the Chicago, Indianapolis & Louisville converted a Pullman tourist car, No. 1522, built in 1917, to a baggage car equipped with an express-messenger unit, said to be the first conforming exactly to Association of American Railroads specifications, approved by Mechanical Division letter ballot as of September 3, 1948. The conversion work was done at railway company shops, Lafayette, Ind., where it is planned to convert a second car in the near future.

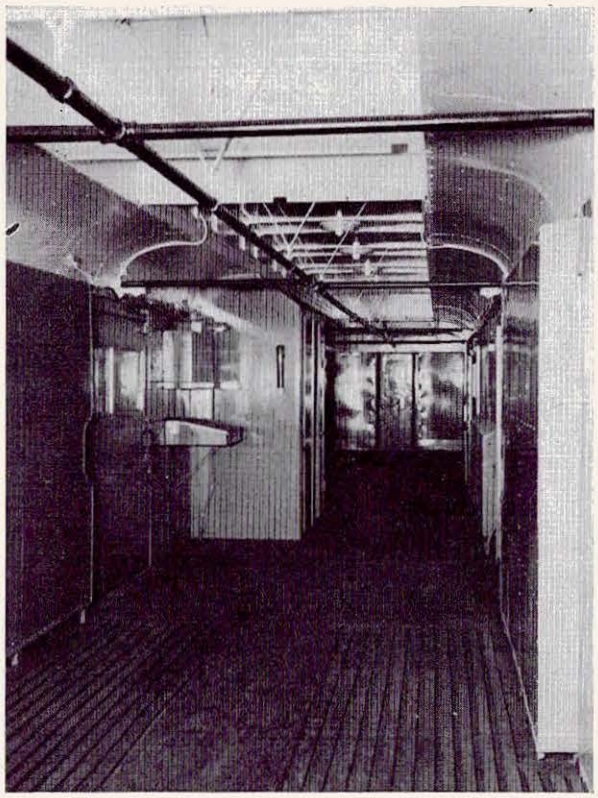
Window sheets of the old car, being badly corroded, were all removed and new steel sheets applied over the posts by welding. Letter board molding was removed and letter boards riveted to the new sheets. Door posts were removed from the former location to a place alongside the vestibule collision posts, welded in place, and tied to the vestibule collision posts by welding ¼-in. steel plates. This construction forms a stronger end than with a vestibule. Steps were removed and side sills extended to vestibule corner posts, eliminating the vestibules. One car end was recessed on the left side to provide end clearance for a Miner hand brake.

Construction Details

The car sides were insulated with 3-in. Fiberglas and sheeted with 16-gage steel. The lavatory, clothes locker and electric locker were constructed of ½-in. Met-L-Wood. Doorways were edged with aluminum extrusions.

End doors were salvaged from U. S. Government hospital unit cars recently converted. Side doors, made in Lafayette shops of 3/16-in. aluminum sheets, are fastened to both sides of extruded aluminum channels with self-tapping screws. Side doors have graduated locating latches so the doors can be opened and secured at eight positions.

Lights in the original car were left in place and bowls removed. Bulkhead screens were retained in the clerestory. The water system was piped to a wet hopper, lavatory wash basin and the original water cooler. The



The express messenger unit at the center of the car is built of Met-L-Wood

axle generator was left in place and the switchboard taken from a hospital kitchen car now used as a head-end caboose. The interior was painted mail car green with the upper section white. The trucks were converted to use 5½-in. by 10-in. axles for a capacity of 60,000 lb. The light weight of the car is 143,600 lb.

GENERAL NEWS

More Study Urged for "General Safety" Law

Many interpretations put on I.C.C. "radio rules" bill

Differences of opinion within the Interstate Commerce Commission as to what should be the scope of the "radio-rules" bill, which proposes to broaden section 25 of the Interstate Commerce Act, were further emphasized at hearings held by the House interstate and foreign commerce committee on the toned-down version of the bill that was endorsed recently by one of its subcommittees. A majority of the commission still favors the toned-down version, which would somewhat limit the proposed grant of regulatory authority over train-operating rules; but Commissioner Patterson, to whom the Bureaus of Safety and Locomotive Inspection report, adheres to the commission's previous position in favor of the original version with its proposed grant of regulatory authority over all railroad operating rules.

"Wholly Unsatisfactory" to Railroads

J. Carter Fort, vice-president and general counsel of the Association of American Railroads, who also appeared at the hearings, made plain the railroad position that "no bill" should be reported to the House by the committee. Mr. Fort said there had been "some misunderstanding" with respect to the railroad position on the subcommittee version. "It is," he said, "true that these amendments limit to some extent the power which the bill would otherwise give to the Interstate Commerce Commission and, therefore, represent an improvement over the bill in its original form. Nevertheless, the bill, even with the . . . amendments, is wholly unsatisfactory to the railroad industry because it would still give the . . . commission broad, although uncertain powers, over rules, regulations and practices with respect to the operation of trains." Railroad executives appearing at previous hearings on the bill assailed it as a "make-work" measure, while representatives of railroad labor organizations urged its enactment as a "safety" measure.

The present series of hearings, which opened on August 4, were the result of the committee's decision to receive further presentations from members of the I. C. C. before acting on the subcommittee's proposal. The bill, H. R. 378, is sponsored by the committee's chairman, Representative Crosser, Democrat of Ohio. The original version, as indicated above, would broaden section 25, which now contains provisions of the so-called Signal Inspection Act of 1937, to give the commission authority also over installations of radio and other train-communication systems, and over all railroad operating rules. The subcommittee's version embodies amendments suggested by the commission after it had endorsed the original version. As modified by those amendments, the proposed legislation would still give the commission authority to require installations of radio and other train-communication systems; but its authority to prescribe train-operating rules would be confined to rules "in connection with" such installations and installations of signaling devices over which the commission already has authority under the present law.

Commission Now Has "Different Idea"

Commissioner Splawn, chairman of the commission's legislative committee, was the first witness at the hearings. He advised the committee that the commission now has a different idea from that submitted to the subcommittee as to the language of the amendments limiting the rules authority. The effect of the alternative language proposed by Dr. Splawn, he said, would be to insure that the commission's authority over train-operating rules in connection with the signaling and communication systems would apply to systems voluntarily installed by the railroads as well as to those ordered in by the commission. Dr. Splawn also suggested alternative language for another amendment which was made by the subcommittee, though not recommended by the commission. The amendment involved would require that "opportunity for hearing" be accorded interested parties before the commission issued any order under the section. The "alternative" language would have the effect of requiring a hearing only "with respect to mandatory orders," if requested by any interested party.

Meanwhile, Dr. Splawn had explained that the commission's change of front with respect to the original version, which it had recommended in its last three annual reports, was brought about by a vote of six commissioners. Nine of the 11 members, he said, were present at the conference where it was decided to recommend the amendments limiting the rules authority. Two of the commissioners (Commissioner Patterson later said he was one of them) voted against making the recommendation. Commissioner Splawn said he did not vote, because he had been active in trying to work out a "compromise" on which the commission could present a united front. The six commissioners who voted to recommend the amendments, he explained, were of the view that the commission could not foresee "all of the contingencies" that might arise under the bill's original version.

"General Safety Act" May Be Necessary

Dr. Splawn went on to say that a "general safety act" may become necessary, but the commission has "not reviewed that question or made a recommendation on it." It was the commission's present view, he added, that consideration of "general safety" legislation should include consideration of such questions as the desirability of enacting such legislation in the form of amendments to existing special acts, and the extent to which it would be in conflict with those acts. The commission "does not oppose" a general safety act, but it is not prepared to present its views on the matter at this time, Dr. Splawn also said. It is, as he put it, with a "feeling of humility" that the commission offers a suggestion to Congress; and in that spirit it was offering its present recommendation as "the best we can think of up to this time."

Commissioner Splawn was questioned at some length by committee members, particularly by the ranking minority member and former chairman, Representative Wolverton, Republican of New Jersey. Mr. Wolverton noted that accident statistics since 1920 indicate a gradual and continuing improvement in railroad safety, and he asked what I.C.C. experience offset that showing to the extent of warranting a request for the proposed legislation. Dr. Splawn explained that the accidents of 1946, which he called a "bad year," prompted the commission to get into the matter. Mr. Wolverton then asked what I.C.C. experience justified the request for even the limited rules authority, and Dr. Splawn replied that the commission was going along on that "out of confidence in the commissioner" (Mr. Patterson) who administers the safety acts.

Elaborating on this reply, Dr. Splawn went on to say that the scope of the rules authority has been the subject of the "big debate." He added that the commissioners comprising the majority changed their minds about the original version's rules provisions because "if you take the lid off, they didn't know what they'd be called upon to administer." Mr. Wolverton then observed that the sponsors of legislation should be in a position to set forth conditions which make the legislation necessary. He added that he did not think this had been done in the present case. He also

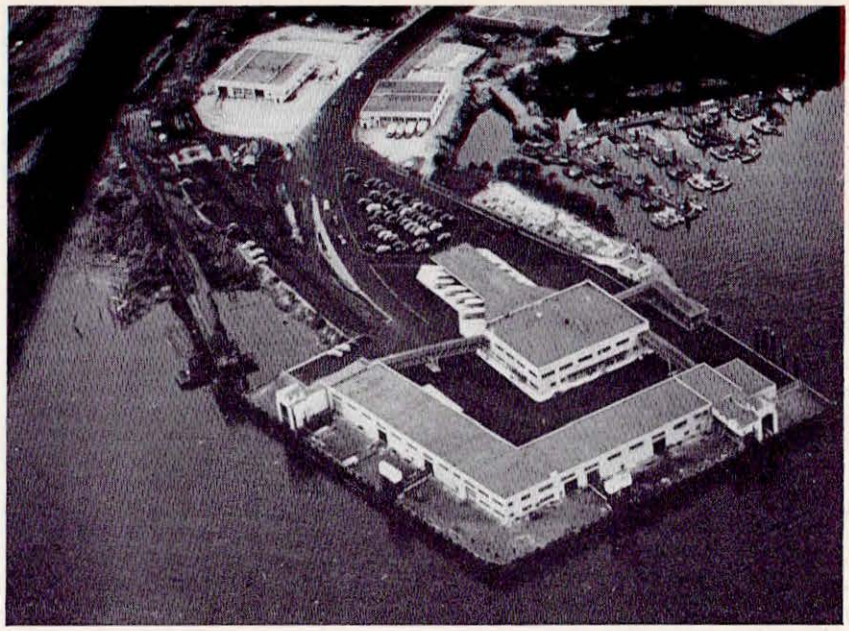
asked Dr. Splawn if action on the bill should be delayed while the committee considered a general railroad safety act. The commissioner replied that he thought the matter of a general safety act should be studied, but that his proposal for such a study was not offered "as a suggestion to postpone anything."

Patterson Favors Original Bill

Commissioner Patterson read a prepared statement in which he emphasized that he still favors the original version of the bill, modified only by those subcommittee amendments which are designed to safeguard the present jurisdiction of the Federal Communications Commission over railroad radio installations. If the rules provisions are to be limited, however, Mr. Patterson favors, with some modifications, the alternative language suggested for those provisions by Dr. Splawn. After saying this, Mr. Patterson hastened to make clear his opinion that "it would be a mistake so to limit the authority delegated to the commission." He pointed out that only about 106,000 miles of the country's 266,000 miles of railroad are equipped with signaling systems covered by section 25; and that restriction of the rules authority to rules "in connection with" such devices would leave the commission without rules authority on "approximately half of the mileage." Also, he noted that even on the lines where signaling systems are in operation, many train-operating rules would be outside the scope of the rules provisions of the subcommittee bill.

Questioning of Mr. Patterson was opened by Representative Sullivan, Democrat of Missouri, who brought out the fact that the original version of the bill was recommended by the commission in its last three annual reports. He then asked what changed the minds of the commissioners. Mr. Patterson replied that the individual members would have to answer for themselves. He added that there was no change of position by him, but he is now in a "hopeless minority." In response to further ques-

(Continued on page 92)



The Canadian Pacific's new $1,700,000 terminal at Nanaimo, Vancouver Island, British Columbia, is capable of handling traffic moving by rail, road or water. Freight sheds are contained in the L-shaped building facing the water, with overhead passageways leading to the square two-story passenger station, which contains waiting room, rest room and restaurant facilities for 11,200 passengers per day. The canopied area next to the passenger building provides parking space for buses, with a Vancouver Island coach lines garage and an island freight services garage close by. In opening the new pier, G. H. Baillie, C. P. R. Pacific Region vice-president, announced that, in addition to two new 6,000-ton passenger ships put into service this summer, the company has ordered a "super" ferry, with accommodations for 1,500 passengers and 130 automobiles, to be built in Scotland, for service between Nanaimo and Vancouver

Emergency Board Tells Unions to Obey Law

Adjustment Board and courts better remedy than strikes

"We are obliged to report the failure of our mission," President Truman has been advised by the emergency board created by him to investigate the dispute between the Missouri Pacific and certain of its employees represented by the Brotherhood of Locomotive Engineers, Brotherhood of Railroad Trainmen, Order of Railway Conductors, and Brotherhood of Locomotive Firemen & Enginemen, which had reached an impasse resulting in those unions calling a strike slated to be effective July 11.

The strike ballots had been predicated upon some 300 unadjusted grievance claims that had developed out of the interpretation or application of working agreements, this 300 being the number left in dispute out of some 1,800 cases that developed between 1938 and 1945. The emergency board found that, with a few exceptions, the grievances were within the jurisdiction of the First Division of the National Railroad Adjustment Board, and it suggested to the parties that those cases be submited to that authority as provided by the Railway Labor Act.

"Two reasons were advanced by the representatives of the employees as to why this suggestion was unacceptable to them," the report went on to say. "They asserted, first, that the failure of the carrier to comply with previous awards rendered it futile for them to again resort to the Adjustment Board: and, secondly, that the First Division was so far behind with its docket that it would require years to carry this group of cases through that agency."

Adjustment Procedure Scorned

The emergency board suggested then that the federal courts have full authority to enforce awards of the Adjustment Board, but the "representatives of the employees expressed themselves as not disposed to make use of this remedy." The emergency board also pointed out that two supplemental boards have been set up by agreement of the railroads and the operating brotherhoods to relieve the First Division, but the union representatives "persisted in their determination not to take their claims to the Adjustment Board. We see no reason why this cannot and should not be done, even at this late hour," the emergency board stated.

The board also suggested, it reported, that the Railway Labor Act provides for system adjustment boards, and it proposed that this means be resorted to as a "temporary expediency" to clean up the cases enumerated on the strike ballot. "We regret to report that this suggestion was not sympathetically received," the board advised the President.

"The representatives of the organizations expressed the view that since an emergency board had been created it was the duty of this board to hear these operational disputes and that the complaining employees were no longer obligated to take their grievances to the Adjustment Board," the report continued. "With this point of view we find ourselves unable to agree. This board, like the Adjustment Board, derives what authority it possesses from the Railway Labor Act, and we find nothing in that act which authorizes us to assume the functions of the Adjustment Board in the settlement of disputes that are within its peculiar jurisdiction. That board has final administrative jurisdiction of opera-

Employees Toss More "Bouquets" Than "Brickbats" in T. & P. Quiz

The majority of Texas & Pacific employees consider themselves well paid, are happy in their jobs, like their supervisors and fellow workers, and would go to work for the T. &. P. again if they were starting their careers anew, the road revealed last week. Announcing results of its employee questionnaire distributed last February (reported in the *Railway Age* of February 26, page 53), the T. & P. said that 2,406 employees responded to 59 questions asking for opinions on how the railroad is being run or ought to be run.

The road's employees are more interested in security than advancement and prefer an eight-hour day and five-day week, it was disclosed. Answers to the questions show that T. & P. workers have a good understanding of company profits and the majority know how much money their company earns. Most of the employees said that railroads should earn more on their investments. T. & P. management was given a vote of approval, although 43 per cent of the respondents said their immediate supervisors failed to praise them for work well done. While the majority of employees like their present job, get a feeling of satisfaction from their work, and think that their working conditions are average or better, 60 per cent feel that they are not given an opportunity to use their experience. Another 55 per cent believe their chances for advancement to be just fair or not very good, while a majority would like to have better or more job training.

The T. & P. executive department is currently studying 1,058 suggestions received in reply to question No. 22, which solicited suggestions for making the company a better place to work. Question No. 59 — "If you were president, what changes would you make on the T. & P. that would improve its services and make it a better railroad" — drew 1,539 responses.

The replies were tabulated by the Department of Economics, Southern Methodist University, and distributed in booklet form to employees with their August 1 paycheck.

tional disputes while the functions of this board are limited to fact finding and the making of recommendations . . . .

"We should like to point out that if it is permissible under the Railway Labor Act for employees to circumvent the functioning of the Adjustment Board merely by creating a situation that calls for the appointment of an emergency board, the act has lost its efficiency for maintaining harmonious and orderly relations in the railroad industry in so far as operational disputes are concerned."

Unions Set on Strike

The report detailed various expedients to which the emergency board resorted in an effort to induce the union spokesmen to conclude the dispute, and its summation of the results led to the admission of failure quoted above. "It seems inconceivable to us," the board went on to say, "that a coercive strike should occur on one of the nation's major transportation systems, with all of the losses and hardships that would follow, in view of the fact that the Railway Labor Act provides an orderly, efficient and complete remedy for the fair and just settlement of the matters in dispute. Grievances of the character here under discussion are so numerous and of such frequent occurrence on all railroads that the general adoption of the policy pursued by the organizations in this case would soon result in the complete nullification of the Railway Labor Act. We cannot bring ourselves to believe that these parties are ready to assume the responsibility of sponsoring such a program."

There were six grievances listed on the strike ballot which the board found to be within its jurisdiction, and it heard the contentions of the parties on these cases and submitted its recommendations as to them. One dealt with the assignment of regular cabooses to regular conductors, and the board held that the "situation has been remedied to the extent that it ought no longer be regarded as the basis of a substantial dispute."

Another controversey involved payment for operation of test trains to determine locomotive tonnage ratings, and the board recommended that the agreement proposed by the railroad be adopted, with some modifications. Other cases had to do with the definition of the duties of outside hostler-helpers, supplying fuel and water to locomotives at points on the road when the terminal could be reached without such supplies, and running engine crews through specified terminals.

The board consisted of Judge Curtis G. Shake of Vincennes, Ind., chairman, Judge Roger I. McDonough of Salt Lake City, Utah, and Floyd McGown of Bourne, Texas. The report was submitted to the White House on August 2.

Mexican Railroads Get $17,900,000 More to Spend

The United States Export-Import Bank has authorized the extension of two additional credits, amounting to $17,900,000, for the rehabilitation and development of Mexican railroads.

A credit of $12,900,000 has been extended to the Nacional Financiera, S. A., for the improvement of the government-owned National Railways of Mexico. The other credit of $5,000,000 has been earmarked to the Southern Pacific of Mexico, a wholly-owned subsidiary of the Southern Pacific of the United States. Both credits carry the full guaranty of the Mexican government and the S. P. credit represents a sharing with this private enterprise of funds previously set aside for Mexican government projects.

"The dollar funds are to be used only for the purchase in the United States of equipment, materials and services for the rehabilitation and development of the two railways. They will be supplemented by peso funds to be supplied by the Mexican government, and, in, the case of Southern Pacific, by that company," the announcement said.

The funds will be used on the National Railways for the acquisition of new motive power and other equipment, and rehabilitation of roadbed and service facilities; whereas the S. P. improvements will be confined to track and roadbed restoration, shop and signal equipment and other service installations.

The improvements are part of a general program of Mexican railroad rehabilitation for which the bank has already loaned $62,000,000, of which $22,000,000 has been repaid.

Would Put Freight-Bill Credit on Five-Day Week

A petition has been filed with the Interstate Commerce Commission by E. H. Bunnell, vice-president of the Association of American Railroads, seeking modification of the commission's outstanding orders in Ex Parte No. 73 which prescribe periods of credit allowed on and time allowable for presentation of freight bills. The modifications sought would exclude Saturdays as well as Sundays and legal holidays in the computation of time under these orders, and the addition of Saturdays is sought as a result of the establishment of the 40-hour week for non-operating employees effective September 1.

Further Hearings in P. & D. And Small-Shipments Cases

Further hearings in connection with the Interstate Commerce Commission's investigation of pick-up and delivery services and charges on small shipments by railroads and motor carriers have been scheduled for January 10, 1950, at Washington, D. C., before Commissioners Rogers and Alldredge and Examiners H. G. Cummings, S. A. Aplin, G. B. Vandiver, E. L. Boisseree and L. J. Kassel. At the time the hearings were set it was announced also that the commission, by Commissioners Rogers and Alldredge, on petition of the eastern railroads, had ordered that evidence previously received separately in the proceedings (Nos. 29555 and MC-C-542 with respect to p. & d. services and Nos. 29556 and MC-C-543 with respect to small shipments) be treated as available for use in any of the proceedings.

The announcement prescribed special procedure for the further hearings as

follows: Testimony and exhibits to be presented must be served on all parties not later than December 10 to be received at the hearing; 12 copies should be transmitted to the commission and one to each "cooperating state commissioner"; and those desiring to cross-examine any witness on evidence already in the record must notify the witness or his counsel and the commission not later than December 10.

It was indicated that, unless otherwise directed, the procedure at the further hearing will be: (1) Cross-examination relating to evidence already in the record; and (2) Presentation of additional evidence by (a) members of the commission's staff, (b) representatives of other public authorities, (c) railroads, (d) motor carriers and (e) shippers. Cross-examination will follow immediately after direct, and must be completed at that time. Secretary Bartel of the commission stated that it is expected that this will be the final hearing in the small-shipments proceedings.

D. L. & W. Receives New Equipment

Delivery of 15 new streamlined coaches and nine sleeping cars containing rooms and roomettes, ordered by the Delaware, Lackawanna & Western as part of its post-war modernization program, has been completed by the American Car & Foundry Co.

The coaches have been put into service between New York and Buffalo, while the sleeping cars are being operated between New York and Binghamton, N. Y., Elmira and Buffalo, with some in New York-Chicago service.

The modernization program includes still another group of streamlined coaches being built by the Pullman-Standard Car Manufacturing Company, and dining cars and observation-lounge cars being built by the Budd Company, all of which will be delivered after September 1. Each new coach accommodates 64 passengers, and each sleeping car contains six double bedrooms and 10 roomettes, equipped with individual light, heat and temperature controls.

Grand Central's Lower Level To Be Closed at Night

The lower level of New York's Grand Central Terminal is to be closed every night between 11 p.m. and 7 a.m., Eastern Daylight time, beginning August 8; between those hours all New York Central and New York, New Haven & Hartford trains will depart or arrive on the upper level, E. B. Moorhouse, terminal manager, has announced. No trains will be canceled and no schedules will be altered.

The closure follows successful experimental operation of all trains on the upper level during three Saturday nights, and is designed to reduce operating expenses in view of the inauguration of the 40-hr. week on September 1.

The N.Y.C. has also announced that it will discontinue, effective September 3, Saturday ferry service between Weehawken, N. J., and Cortland street, New York. The number of commuters using the ferry to downtown New York has fallen off to 157 people in each direction on an average Saturday, while the loss in operating the ferry on Saturdays is estimated at about $32,000 annually. There will be no change in Monday-through-Friday schedules, or in ferry service between Weehawken and West 42nd street, New York.

Time Zone Investigation

The Interstate Commerce Commission has modified its definition of the United States Eastern Time zone so as to embrace Hamilton County, Tenn., including Chattanooga, which was heretofore in the Central Time zone. The change is effective August 14. The proceeding (No. 10122) was reopened on petition of the Chamber of Commerce, Junior Chamber of Commerce, and Retail Merchants Association of Chattanooga (see *Railway Age* of June 18, page 62).

Waybill Studies

Two additional waybill studies have Transport Economics and Statistics of the Interstate Commerce Commission. They are: Statement No. 4925, Traffic and Revenue in the Products of Mines Group by Commodity Class, Territorial Movement, Length of Haul (Short Line), and Type of Rate—All Terminations in 1947; and Statement No. 4926, Traffic and Revenue in the Products of Forests Group by Commodity Class, Territorial Movement, Length of Haul (Short Line), and Type of Rate—All Terminations in 1947.

Derailment Safety-Guide, High Crossover Rail, Cause Accident

Reporting on its investigation of the May 20 derailment of a Union Pacific passenger train near Emory, Utah, the Interstate Commerce Commission has found that the accident was caused by an inadequate clearance between a derailment safety-guide and the top surface of a track rail. The report was by Commissioner Patterson, and it noted that since the accident the U. P. has issued instructions to remove derailment safety guides of the type involved from all passenger train cars, and, in addition, to maintain a minimum clearance of 3¾ in. above the tops of the track rails. Heretofore, U. P. specifications called for a clearance of 2½ in. when the equalizer springs were fully compressed. The accident resulted in the death of one passenger and the injury of nine others.

The train was No. 1, the westbound "Los Angeles Limited," consisting of three Diesel-electric locomotive units, coupled in multiple control, and 11 cars. It was travelling 53 m.p.h. in a 75 m.p.h. zone when the front wheels of the rear truck of the last car were derailed as they approached the switch of a crossover. The report said the derailed wheels continued in line with the track for over 2,200 ft. to a track motor-car set-off, when the rear pair of wheels also derailed. The rear end of the last car veered toward the south and struck a girder of a bridge and the rear truck was torn loose from the car. When the train stopped, the rear end was over 4,000 ft. west of the derailment point. The front truck of the rear car was not derailed and all other parts of the train also remained on the track.

In the vicinity of the point of accident is a double-track line, over which trains are operated by signal indications. A trailing-point hand-operated crossover 283 ft. long, which connects the main tracks, is located 2 mi. east of Emory. The accident occurred on the westward main track at a point 21.7 ft. east of the west switch of the crossover. From the east, the westward main track is tangent 4,237 ft. to the point of accident and 16½ ft. beyond. The westward main track is constructed of 131-lb. rail, 39 ft. in length, laid on an average of 22 treated ties to the rail length. It is fully tieplated and spiked, provided with 6-hole joint bars, and an average of 12 rail anchors per rail length. Ballast of crushed stone extends to a depth of 8 in. below the ties.

The structure of the turnout at the west end of the crossover consists of a 131-lb. No. 10 spring-rail type frog, 131-lb. rails and switch rails, and two guard rails. A gage plate is provided at the point-of-switch and also on the third tie west of the point-of-switch. Switch plates extending under each stock rail and its respective switch rail and under each main-track rail and its respective lead rail are provided on the first 19 ties east of the point-of-switch. The guard rails and stock rails are "adequately" braced, and rail anchors are provided in each direction east and west of the switch point. The track motor-car set-off located 2,329 ft. west of the point of derailment consists of planking and extends through both main tracks.

The report described the derailed car as a sleeping car of lightweight high-tensile steel construction, built during May, 1942. It has one vestibule, which was next to the tenth car. Its light weight is 139,800 lbs. The car is provided with two 4-wheel trucks, spaced 59½ ft. between truck centers.

As to the derailment safety guide, the report described it as a device which is "welded to the bottom surface of the pedestal tiebar ⅜ in. inward and parallel to the outer edge. These guides are 15 3/16 in. long at the bottom and ¾ in. thick. They project downward 1¼ in. The purpose of the derailment safety-guide is to guide the truck close to the rail in case of derailment." U. P.'s specifications provide that the lower edge of the device be not less than 4½ in. above the surface of the rail when the truck wheels are of full diameter and the equalizer springs are under normal compression. Further, the report said that

the outer edge of the derailment safety-guide was 14 in. outward from the throat of the flange of the wheel.

Examination of the westward main track, the report said, revealed the first mark on the south rail of the crossover 12½ ft. east of the point-of-frog. At this point, it continued, the distance between the gage side of the north rail of the westward main track and the outside edge of the south rail of the crossover was about 14 in. The next mark appeared on the gage side of the north lead rail 31½ ft. east of the point of switch and 14 in. from the gage side of the north rail of the westward main track. Between points 2½ ft. and 7½ ft. west of this latter mark, it was found that the south side of the north lead rail was heavily scored. Opposite this point, marks indicated that a flange had mounted the south rail of the westward main track 21.7 ft. east of the point of switch, then crossed diagonally outward and dropped outside the south rail within a distance of 33.9 ft. The north wheel, the report added, dropped inside the north rail opposite this point. Single flange marks then appeared, both inside the north rail and outside the south rail throughout a distance of over 2,300 ft. westward to the track motor-car set-off, where the other pair of wheels of the truck became derailed. The truck then struck the south girder of a bridge 288 ft. west of the above set-off and the rear truck of the last car became detached from the car.

Examination of the truck, the report added, disclosed that the "center-pin was broken, the front axle was bent and numerous parts of the truck were broken, as a result of its contact with the bridge. The outer face of the right front derailment safety-guide bore marks of its having rubbed heavily against a rail. The derailment safety-guide and the right equalizer bar were heavily scored on their inner surfaces. These marks indicated that these devices had held the truck in line with the track between the point of derailment and the motor-car set-off."

From the marks on the west turnout of the crossover and on the derailment safety-guide, the report said "it is apparent that the right front derailment safety-guide came in contact with the rails of the turnout at points where the gage side of the north rail of the westward main track was about 14 in. distant. After the outside vertical face of the derailment safety-guide came in contact with the gage side of the north lead rail of the turnout, a force was exerted by the north lead rail against the outside face of the derailment safety-guide. This force increased as the distance between the north lead rail and the north main track rail progressively decreased. It became sufficient to force the flange of the left front wheel to the top surface of the south rail, at a point 21.7 ft. east of the point-of-switch, and then it dropped outside the rail 27.2 ft. westward. At the point of derailment, the north lead rail of the turnout was 1 in. higher than the north rail of the westward main track."

Because of the damage incurred by the truck during the derailment, the report said "the clearance between the derailment safety-guide and the track rail before the accident occurred could not be determined." However, it concluded that "the lead rail of the crossover was 1 in. higher than the main track rail and adequate clearance was not provided to prevent contact between the derailment safety-guide and the lead rail."

Budd Elected Chairman of Chicago Transit Authority

Ralph Budd, who will retire on August 31 as president of the Burlington Lines, has been elected chairman of the Chicago Transit Authority, to which he was appointed a member last April (see *Railway Age* of April 16, page 77). His term is for three years, beginning on September 1.

Mr. Budd's election was lauded in an editorial published by the Chicago Journal of Commerce, which stated: "If anyone can restore public confidence in the C. T. A., that man is Ralph Budd. To every informed Chicagoan he is Mr. Transportation. No man in the industry is more respected by management, employees and the riding public, alike.

"To his new post Mr. Budd brings the ripe experience of half a century in the business of transporting human beings from here to there. With it is coupled a vigor which scoffs at his 70 years. Our municipal transportation system is in capable hands with Ralph Budd perched on the driver's stool."

Unions Advised Not to "Load" Strike Ballots

An emergency board appointed by President Truman to investigate a dispute between the Union (Pittsburgh, Pa.) and certain of its employees represented by the Brotherhood of Railroad Trainmen has recommended that the handling of grievances and cases involving interpretation of agreements be "speeded up" on this road so that "better relations will exist through greater cooperation on the part of both parties."

In its report, delivered to the White House last week, the board made specific recommendations as to two of the 15 items which had appeared on the ballot on which the brotherhood's strike call was based. Six other items were withdrawn or settled in mediation while the board's investigation was in progress and the others, the board found, were of "relatively minor importance." In this connection the report said, "We decry the tendency to load the strike ballot with relatively minor issues once the decision is made to spread the ballot by reason of major disputes. Much time has been expended by this board and others in handling matters that should have been settled without difficulty through negotiation or should have been referred to other statutory tribunals."

Of the two grievances rated as "important" by the board, one had to do with the wording of bulletins describing assignments available to crews. The board found that in some instances the bulletins did not comply with the rule in the working agreement that the work to be performed must be "adequately described." By "cooperative consultation," it held, proper descriptions of the assignments generally should be possible. Where agreement cannot be reached as to the wording, arbitration was recommended.

The second major issue had to do with connecting of air hose, which the board, upholding the carrier's contention, held to be part of the regular duties of trainmen. The board, consisting of Andrew Jackson of New York, chairman, Judge Elmer T. Bell of Washington, D. C., and Judge Leif Erickson of Helena, Mont., was created May 12 to investigate the circumstances which had led the union to call a strike for May 14.

M. W. Harrison Dies

Milton W. Harrison, consultant and member of the governing board of the Railroad Security Owners Association, Inc., from 1935 to 1939, died on August 8, in the Lawrence Hospital, Bronxville, N. Y. He was 60 years old. Mr. Harrison was graduated from St. Lawrence University, Brooklyn Law School, the New York University School of Accounts, Commerce and Finance, and the American Institute of Banking. At the time of his death, he was a member of the executive committee of the Bowery Savings Bank of New York, and chairman of the board of the Midland Continental, Jamestown, N. D. He had served in many instances as a conciliator between railway management and labor.

Railroads Continue Testimony in Diesel Case

A 1943 agreement between the western railroads and the Brotherhood of Locomotive Firemen and Enginemen was supposed to have permanently settled the question of using additional firemen on Diesel-electric road locomotives, Daniel P. Loomis, of Chicago, chairman of the Association of Western Railways, told the Presidential "fact-finding" board which has been holding hearings at New York since June 27 on the union's demand for employment of extra men.

Mr. Loomis, the sixth witness to appear for the railroads in opposition to the brotherhood's claim, followed L. W. Horning, vice-president, personnel and public relations, of the New York Central, whose testimony was reported, with that of preceding railroad witnesses, at page 56 of last week's *Railway Age*. Mr. Loomis had in turn been followed, up to the time this issue went to press, by Fred G. Gurley, president of the Atchison, Topeka & Santa Fe, C. H. Sauls, general manager of the Seaboard Air Line, and D. W. Brosnan,

general manager, Central Lines, of the Southern.

Mr. Loomis, who headed the railroad committee that worked out the 1943 agreement, told the board that in the negotiations leading to that agreement "the firemen conceded it was a matter of managerial judgment as to whether a second fireman should be assigned to the passenger locomotives and that the firemen's organization had no rights in the matter other than to insist upon compliance with the rule that firemen occupy the control cabs while trains are in motion."

Mr. Gurley, whose railroad is the largest user of Diesels, charged that the firemen's organization is trying to create "additional and unnecessary jobs," which cannot be justified on grounds of safety or efficiency, or on any theory of profit-sharing.

"By what process of reasoning," he asked, "is the Santa Fe to be required to add 680 needless employes to our payroll? It certainly has nothing to do with the safety of the firemen-helpers on the Diesels because our experience shows that a fireman would have to work 56 years on an average before encountering an injury of any kind—even a minor one. The thing just doesn't make sense and that is the reason we have refused to do it."

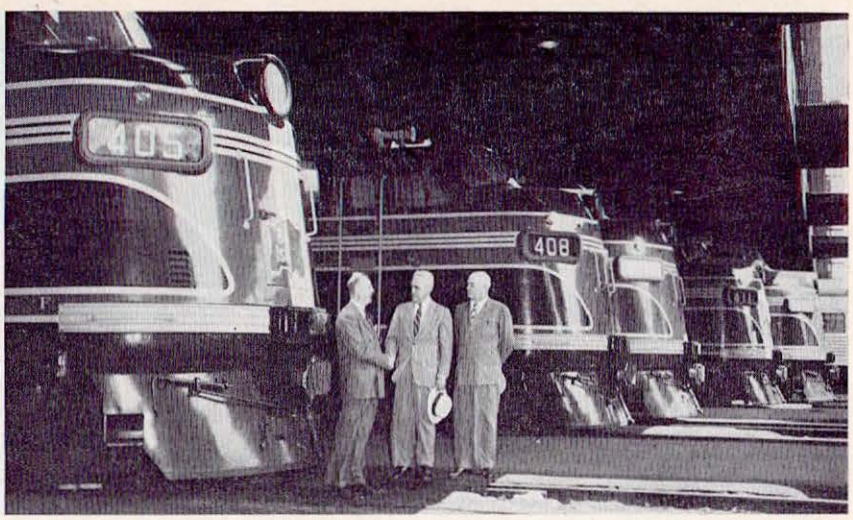
Mr. Gurley said the Diesel-electric locomotive, "instead of depriving firemen of jobs, had produced more jobs" and challenged the union's claims that only the stockholders and bondholders had profited by its introduction. "It really isn't a matter of 'profit-sharing,' because the wages of firemen are the same on railroads operating in the red as on railroads which earn a modest profit. It is more a matter of what becomes of the total operating revenues of the railroads."

He said that in 1948 the proportion of the Santa Fe's operating revenues paid to road firemen, including payroll taxes for their benefit, was 16 per cent greater than in 1926-30. While the firemen are getting this increase in their proportion of the Santa Fe's total operating revenues, the railroad company and its bondholders and stockholders are getting less. The proportion of its operating revenues that the Santa Fe had left after paying expenses and taxes decreased 43 per cent in comparing 1948 with 1926-30, Mr. Gurley added.

He also cited Santa Fe employment figures to show that firemen had gained rather than lost with introduction of Diesel power.

Comparing 1948 with 1926-30, Mr. Gurley said there had been an increase of 21 per cent in the number of road firemen, but of only two per cent in the number of all employees. Many modern passenger trains, he added, would not be in service today if it had not been for the advantages afforded by the new type of motive power.

Mr. Gurley said the union's demands for two helpers on Diesel-electrics could not be justified on grounds of physical exertion or undue exposure to accidents. As evidence of this, "firemen with the most seniority almost invariably exercise their rights to place themselves on Diesel locomotives in preference to steam engines." With respect to safety of passengers, he said a study of Santa Fe passenger operations for three years failed to disclose "a single instance of an injury to a passenger under circumstances where there could be any connection whatsoever with the number of men in the cab."



ROCK ISLAND MOVES TOWARD COMPLETE DIESELIZATION OF SUBURBAN SERVICE.—The Chicago, Rock Island & Pacific last week received from the Electro-Motive Division of General Motors Corporation six more 1,500-hp. Diesel-electric locomotives for its Chicago suburban service. The road now has 12 such Diesels, with but eight more needed to retire all of its remaining steam locomotives in suburban service. On hand at LaSalle Street station to receive the new units was John D. Farrington, president of the R. I. (center), who is here shown being congratulated by C. R. Osborn, vice-president of General Motors and general manager of Electro-Motive, while W. H. Hillis, vice-president—operation of the R. I., looks on with approval.

Referring to the Santa Fe's safety record, Mr. Gurley said that in 53,900,000 road miles of Diesel operation over a three-year period, no fireman had lost his life in an accident, and that there had been only 20 injuries—mostly minor. A third of these were caused by falls in the engine room, due usually to slipping on the steel floor, and Mr. Gurley said measures had been taken to minimize that hazard. "There is nothing in our experience to suggest that another man on the Diesel would promote safety. On the contrary, the suggestion is that with more men there would have been more injuries."

"Friendliness and Companionship"

Mr. Gurley described a new type of Diesel-electric locomotive which the Santa Fe is putting into service, which has no engine room to patrol. "The engine and its appurtenances are under a hood similar to an automobile," Mr. Gurley explained. "Yet, under the firemen's proposal, another helper would have to be provided. The only place he could ride would be in the cab with the engineer and the helper already there. I suppose the presence of this additional man would make a contribution to the spirit of friendliness and companionship which prevails among engine service employees, but that is not a commonly accepted justification for additions to the payroll."

Railroad operating practices should be kept flexible, Mr. Gurley concluded. "I look with dismay upon any plan or demand which will prevent us from adapting our practices to new developments and to what we learn from experience."

"The competitive situation confronting the railroads calls for maximum efficiency and economy, and this can be achieved only when railroad labor stops its make-work demands and cooperates with management in eliminating featherbedding practices," Mr. Sauls told the board. "Adding non-productive jobs to the payroll can only serve to destroy the solvency of the railroads and also result, not in more, but actually in less overall employment."

Describing engine service employes as "high-priced" men, Mr. Sauls said "if additional unnecessary firemen must be employed I have no hestitation in saying the result will be the laying off of still more lower-paid employes in other classes of service." There is a lot of maintenance work done on railroads, he explained, which is essential to the continued upkeep of the property. Where revenues do not permit all of this work to be done, he continued, that portion which can be deferred will be deferred at the expense of jobs for maintenance forces.

Directing attention to the "serious financial plight" of the railroads, Mr.

Sauls said the railroads are being "squeezed" by the pressure of rising costs against a ceiling of limited rates. He cited evidence showing that the average cost of all materials used by the railroads was more than twice as high in 1948 as in 1938, while freight rates increased slightly over 50 per cent. "The only possible way out of the squeeze in which the railroads find themselves is by greater efficiency of operation, and Diesel locomotives have proved themselves to be one of the most effective tools for solving this problem."

Challenging the union's assertion that the Diesel-electric has resulted in less employment of firemen, Mr. Sauls said "the number of firemen has increased about 30 per cent on the Seaboard since their first Diesel locomotives were purchased in 1938."

Mr. Sauls told the board that his railroad initially used trained machinists and electricians as maintainers in the engine rooms of Diesels but soon discovered it was realizing very little benefit from their use and discontinued the practice. "I submit," he said, "that when railroad management—responsible for safe and efficient operation—has decided that they did not receive any benefit from use of trained shop men in the engine rooms of Diesels, the firemen's organization should not be permitted to over-ride management's judgement by insisting upon the employment of an untrained man in the engine room."

Mr. Brosnan, testified briefly in rebuttal of evidence previously offered by brotherhood representatives.

Survey Finds Public Still Friendly to Railroads

Only 11 per cent of the public is now in favor of government operation of railroads, according to the results of the ninth annual survey of public opinion conducted for the Association of American Railroads by Opinion Research Corporation. This is the lowest index of government ownership sentiment observed since the surveys were started. The railroads are rated the most important carrier (among a group including also the trucks, air lines, and inland water carriers) by about two thirds of the people. In this respect there has been some decline in recent years in the industry's position, as in 1946 it was rated first by three fourths of the people. Trucks were considered most important by 16 per cent in 1946, and by 21 per cent in 1949. Air lines registered no change, being rated most important by 8 per cent of those responding in both years.

Among other findings, the latest survey shows the public somewhat less critical than in earlier years of the job the railroads are doing, though about two-fifths of the replies indicate the railroads could do better than they are, and one person out of five reports having heard railroad passenger service recently criticized. Three people out of ten consider the railroads progressive in adopting new ideas and better practices, but four out of ten consider them slow in these respects.

Preference for train travel as compared to air has declined somewhat since 1948 (the interviews were conducted in April), but it still remains considerably above the 1946 level, the railroads' present advantage in the comparison being 10 percentage points as against 3 in 1946. Among the things travelers prefer about airplanes, speed and employee courtesy rate first, as heretofore. Railroad employees again are criticized as not always living up to the public's expectations of courtesy and accommodating treatment, although 43 per cent of recent train travelers find them more accommodating now than a year ago, as against 6 per cent who report deterioration in courtesy.

The 1949 survey, for comparative purposes, obtained opinions on the same subjects as earlier investigations, and in most respects the variations in the results were not of great significance. The public continues to indicate a lack of understanding about the railroads' "profits," and the most youthful segment of the population continues to show a definitely greater preference for air travel than the mature brackets express. A substantial number of those interviewed exhibited no particular concern about government subsidies for transportation, and the usual proportion (8 per cent of all persons interviewed) thinks the railroads get more government aid than any other form of transportation.

Millionth Visitor at RR Fair

A housewife from Fort Worth, Tex., who attended the Railroad Fair in Chicago on August 4, was the 1,000,000th customer to visit the 1949 show. The honor brought her a personal welcome from Wayne A. Johnston, president of the Illinois Central, a television set and other forms of special recognition.

A total of 1,135,521 paid admissions had been recorded as of August 8, and 580,904 customers had paid to see the "Wheels-A-Rolling" pageant. The Fair's largest attendance in a single day was 45,321 on July 31.

The "Wishing Well" of the Chicago & Eastern Illinois received its second "cleaning" last week, yielding some $1,000 in small coins tossed in by those with wishes to make. Over $600—all of which is turned over to the Community Fund—was found when the well was first dredged.

The Fair will close on October 2.

Freight Car Loadings

Loadings of revenue freight for the week ended August 6 totaled 716,824 cars, the Association of American Railroads announced on August 11. This was a decrease of 6,986 cars, or 1 per cent, below the preceding week; a decrease of 161,823 cars, or 18.4 per cent, below the corresponding week last year, and a drop of 188,420 cars, or 20.8 per cent, under the comparable 1947 week.

Loadings of revenue freight for the week ended July 30 totaled 723,810 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, July 30

District	1949	1948	1947
Eastern	125,727	159,487	163,579
Allegheny	138,546	182,947	193,985
Pocahontas	48,187	73,073	72,594
Southern	107,103	133,236	129,812
Northwestern	130,846	138,822	143,202
Central Western	116,302	137,656	146,901
Southwestern	57,099	69,154	71,518
Total Western Districts	304,247	345,632	361,621
Total All Roads	723,810	894,375	921,591
Commodities:			
Grain and grain products	65,623	66,369	71,603
Livestock	8,538	8,874	13,260
Coal	109,661	188,701	175,750
Coke	9,166	15,499	14,422
Forest products	40,597	53,948	50,507
Ore	74,357	76,829	84,070
Merchandise l.c.l.	87,142	102,046	113,588
Miscellaneous	328,726	382,109	398,391
July 30	723,810	894,375	921,591
July 23	718,516	882,129	919,928
July 16	724,100	892,080	919,735
July 9	595,321	755,100	807,117
July 2	644,182	757,278	629,204
Cumulative total 30 weeks	21,497,727	24,251,194	25,179,744

July Employment

Railroad employment decreased 1.77 per cent—from 1,230,064 to 1,208,268—from mid-June to mid-July, and the mid-July total was 11.25 per cent below that of July, 1948, according to the preliminary summary prepared by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. The index number, based on the 1935-1939 average as 100, was 115.9 for July, as compared with 118.9 for June and 130.6 for July, 1948.

July employment was below that of the previous month in all groups except the executives, officials and staff assistants group which was up 0.03 per cent. The largest decrease, 4.06 per cent, was in the maintenance of equipment and stores group, while the transportation (train and engine service) group declined 1.48 per cent.

As compared with July, 1948, there were decreases in all groups, ranging from 16.27 per cent in the maintenance of equipment and stores group to 0.20 per cent in the group embracing executives, officials and staff assistants.

C. & O. Abolishes "No Tipping" Policy in Dining Cars

The "no tipping" policy which the Chesapeake & Ohio established in its dining cars some time ago has been recently rescinded in diners operated on the Chesapeake district; but has been retained on the Pere Marquette district.

When the policy was established, a wage increment of $46.20 a month was given to dining car waiters with less than five years' service, and one of $55.20 to those with more than five years' service. Despite this higher pay, it was found that the Chesapeake district wait-

ers preferred the tipping system, and that the habit was "ingrained" in the public. With the restoration of tipping, the wage increments no longer apply.

June Accident Statistics

The Interstate Commerce Commission has made public its Bureau of Transport Economics and Statistics' preliminary summary of steam railway accidents for June and this year's first six months. The compilation, which is subject to revision, follows:

Item	Month of June 1949	Month of June 1948	6 months ended with June 1949	6 months ended with June 1948
Number of train accidents*	671	964	4,467	6,126
No. of accidents resulting in casualties	32	68	240	339
No. of cas. in train, train-service and non-train accidents:				
Trespassers:				
Killed	143	137	549	627
Injured	130	105	513	519
Passengers on trains:				
(a) In tn. accidents*				
Killed	—	—	1	17
Injured	1	71	172	653
(b) In train-service accidents				
Killed	1	1	10	10
Injured	180	233	999	1,301
Travelers not on trns.:				
Killed	—	—	3	3
Injured	51	73	368	525
Employees on duty:				
Killed	31	37	204	296
Injured	1,913	2,488	11,618	15,679
All oth. nontrspssrs:**				
Killed	109	107	770	814
Injured	348	436	2,798	2,233
Total—All classes of persons:				
Killed	284	282	1,537	1,767
Injured	2,623	3,406	16,468	21,910

*Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of more than $250 to railway property in 1948. Beginning January 1, 1949, this minimum was raised to $275. Only a minor part of the total accidents result in casualties to persons, as noted above.

**Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Persons:				
Killed	100	95	707	741
Injured	205	238	1,873	2,016

Heroic U. P. Engineman Dies

H. E. Beyer, Union Pacific locomotive engineer, died on July 29 of burns received when his train struck, and was set on fire by, a stalled gasoline tank truck at a crossing near Montebello, Cal., on July 21. Engineman Beyer's heroism in remaining in the cab of his burning Diesel to bring his train to a safe stop was reported on page 75 of last week's *Railway Age.*

F. R. P. Sponsors Fair Contest

An all-expense trip from the winner's home town to the Chicago Railroad Fair, and return, is the first prize in a contest being conducted by the Federation for Railway Progress to secure additional subscriptions to the federation's monthly publication, Railway Progress.

Winners will be determined by the total number of subscriptions secured; or, in case of a tie, by the best completion, in 25 words or less, of the statement "America needs more railway progress because . . . . ". Entries in the contest must be postmarked by midnight, September 5.

EQUIPMENT AND SUPPLIES

6,434 Freight Cars Delivered in July

Freight cars for domestic use delivered during July totaled 6,434, including 2,779 delivered by railroad shops, compared with June deliveries of 9,121 cars, which included 3,316 delivered by railroad shops, the American Railway Car Institute has announced. July deliveries included 877 box cars, 1,236 gondola cars, 2,630 hopper cars, 878 refrigerator cars, 638 tank cars and 175 cars of other types.

Freight-train cars ordered last month for domestic use amounted to 408, including 200 ordered from railroad shops, compared with 153 cars ordered in June, all of which were ordered from contract builders. The backlog of orders on August 1, the institute said, was 36,564 cars, including 17,955 on order from railroad shops, compared with 42,813 on order on July 1 and 125,093 on order on August 1, 1948.

SIGNALING

The **Chicago, Milwaukee, St. Paul & Pacific** has placed an order with the Union Switch & Signal Co. for materials to install automatic permissive block signaling on approximately 62 mi. of single-track line between Beloit, Wis., and Sturtevant, involving searchlight signals, relays, switch circuit controllers, rectifiers, transformers and housings. The installation work will be handled by railroad forces.

SUPPLY TRADE

American Brake Shoe Earns More in First Six Months

Sales of the American Brake Shoe Company amounted to $53,459,897 during the six months ending June 30, William B. Given, Jr., president of the company, reported to stockholders on August 1. Sales in the first six months of 1948 totaled $57,729,761. Net income for the first six months of this year was $2,703,095, or $2.32 per share of common stock, as compared with earnings of $2,120,070 or $1.74 per common share, in the first six months of 1948.

Earnings of $1,236,373 for the second quarter were equal, after preferred dividends, to $1.04 per common share, compared to earnings in the second quarter of 1948 of $1,144,064, or 95 cents per common share.

Unfilled orders at the end of the second quarter were $15,604,000 compared with $30,871,000 at the beginning of 1949. "Due to high customer inventories in many of our products, the rate of incoming orders is still below customers' consumption," Mr. Given said. "In our judgment orders from customers will not reflect their current rate of use of our products prior to October 1."

The company is in the process of acquiring a war plant at Tonawanda, N.Y., from the government at a cost of $655,000. The railroad special trackwork production of the Hillburn, N. Y. plant, originally built in 1880, and of the Niagara Falls, N. Y. plant, originally built in 1900, will be transferred to the Tonawanda plant. The Niagara Falls plant will be sold and indications are that the Hillburn plant will be used for other production. During February, the railroad car wheel plant at Sayre, Pa., was closed, and on July 31 the Atlanta, Ga., car wheel plant of the company was closed. No important capital loss is expected to be involved in connection with these plants as the steps have long been contemplated and capital expenditures kept at a minimum.

New Officers for Lima-Hamilton

At a directors' meeting on August 9, John E. Dixon, formerly president of the Lima-Hamilton Corporation, was elected chairman of the board, to succeed Samuel G. Allen, resigned, and D. S. Ellis, vice-president, at Lima, Ohio, was elected president. George A. Rentschler continues as chairman of the executive committee and chief executive officer. W. A. Rentschler has been elected executive vice-president, and Henry F. Barnhart, vice-president in charge of shovel and crane sales at Lima, has become a director.

Armco Plans New Steel Plant

The Armco Steel Corporation, Middletown, Ohio, will begin construction soon of a new $12,000,000 steel making plant which is to produce 400,000 tons of steel ingots a year, Charles R. Hook, chairman, has announced. To be located south of the firm's East Works at Middletown, the facility will consist of three 225-ton open hearth furnaces, five miles of railroad tracks, pipe lines, high tension lines and other similar installations necessary for operation of the plant. Construction is expected to require 15 months.

Poor & Co. Profits Up $227,000 In First Six Months This Year

The net profit of Poor & Co., Chicago, was $904,000 for the six-month period ended June 30, 1949, compared with $677,000 for the same period of 1948, the company revealed in a statement to its stockholders on August 3. For the 12 months ended June 30, 1949, the net profit was $1,756,000, an increase of $605,000 over the previous 12 months.

The statement said, in part: "Shipments during the first half year were in themselves very satisfactory and ex-

Additional General News appears on pages 92, 93 & 94.

ceeded shipments in the first half of 1948 by a substantial margin. However, this volume of business was maintained to a very considerable extent at the expense of the backlog of unshipped orders which stands at a little over one-half the figure at the same date a year ago. New bookings continue light."

A regular quarterly dividend of 37½ cents a share on the Class A stock and a dividend of 25 cents a share on the Class B stock have been declared, payable September 1 to stockholders of record August 15.

E. V. Rippingille, Jr., formerly manager of plant No. 2, **Electro-Motive Division, General Motors Corporation** at Chicago, has been appointed president and general manager of G. M.'s new Canadian subsidiary, **General Motors Diesel, Ltd.**, at London, Ont. As noted in the *Railway Age* of August 6, page 63, the new company will build Diesel-electric locomotives for Canadian railroads. Mr. Rippingille is one of G. M.'s youngest operating executives, having been born in 1910 at Brooklyn, N. Y. He "grew up"

E. V. Rippingille, Jr.

in the firm; his father, Edward V. Rippingille, is at present assistant general manager of G. M.'s Research Laboratories Division and has been employed by the company for 25 years. Upon conclusion of his formal education at Detroit, Mich., the younger Mr. Rippingille entered the General Motors Institute at Flint, Mich., where he received training as a mechanical engineer. He next joined the Cleveland Diesel Engine Division of G. M., and in 1937 became a foreman at Electro-Motive. He later advanced to assistant master mechanic, and in 1942 was promoted to assistant factory manager. Mr. Rippingille had been manager of Electro-Motive's plant No. 2 since 1946.

Jonathan E. Teal, who retired on June 1 as transportation engineer of the Chesapeake & Ohio, after 40 years of railway service, has established an office as a consulting engineer at 3813 Brook road, Richmond, Va. Mr. Teal will specialize in economics of railway location and operation; railway abandonments and consolidations; joint terminal facility, trackage and lease agreements and economic studies, surveys and reports. He will also make railway operating and transportation studies relating to Interstate Commerce Commission rate investigations.

R. D. Jablonsky, formerly general superintendent of the **American Car & Foundry Co.**, at St. Charles, Mo., has been appointed district manager at that plant, succeeding the late **W. C. Roederer**. Mr. Jablonsky was graduated from Washington University in electrical engineering. He later joined the Union Electric Company as substation engineer

R. D. Jablonsky

and, during World War II, was general foreman at the Curtiss-Wright Corporation in St. Louis, Mo. In 1946 he joined American Car & Foundry at St. Charles, as a welding engineer. A few months later his duties were broadened to cover problems involving production, scheduling, labor relations and plant engineering and, on May 1, 1948, he was appointed general superintendent.

Edward A. Murray, manager of the manufacturers products sales department, **American Steel & Wire Co. (United States Steel Corporation** subsidiary), at Chicago, has been appointed manager of the Chicago district sales office, succeeding to the duties of **Clarence T. Gilchrist**, whose appointment as western area sales manager, at Chicago, was reported in the *Railway Age* of August 6. Appointed to succeed Mr. Murray as manager of manufacturers products sales is **Fred L. Nonnenmacher**, who has held a similar position at the New York sales office since 1948.

The **Vapor Heating Corporation**, Chicago, has acquired controlling interest in the **Texsteam Corporation**, Houston, Tex., which will begin production of a heavy duty steam generator for oil field use, which was developed by Vapor's engineers. **A. J. Loose**, who has 11 years' experience in the production and engineering of steam generators, will be in charge of operations as vice-president and treasurer of Texsteam.

J. M. Barclay, Inc., 397 Market street, Newark, N. J., sales representative for the **Automatic Transportation Company**, Chicago, has appointed **Harold B. Staniar** to its sales staff.

Clarence Gush has been appointed special railroad sales representative for the **American Hoist & Derrick Co.**, St. Paul, Minn. Along with other lines of mate-

Clarence Gush

rials handling equipment, Mr. Gush will handle the sales of locomotive cranes and other products manufactured by American Hoist & Derrick.

Howard Davies, field engineer in the Cleveland, Ohio, office of the **Warner & Swasey Co.** since 1940, has been assigned to the Syracuse, N. Y., district sales office.

Charles E. Devlin, director of the Douglas Fir Plywood Association, has been appointed general sales manager of the **Simpson Logging Company**, effective September 1, to succeed **R. E. Seeley**, resigned.

Henry E. Manker, formerly traffic manager of the **Plomb Tool Company** at its main plant in Los Angeles, Cal., has been promoted to general traffic manager and will supervise all traffic activities at both the main and the Jamestown, N. Y., plants.

The **International Harvester Company's** Industrial Power Division, Chicago, has announced a change in organization in the engineering department and the appointments of the following as chief engineers: **W. O. Bechman**, advanced engineering group; **M. R. Bennett**, product engineering group; **H. V. Parsley**, government engineering group, and **J. W. Curley**, experimental and test group. **D. B. Baker**, manager of engineering, will direct the reorganized functions of industrial power engineering.

Laurence S. Dahl, general superintendent of operations of the **Carnegie-Illinois Steel Corporation** subsidiary of **United States Steel Corporation**) in the Youngstown (Ohio) district, has been elected operating vice-president of the **Columbia**

Steel Company (also a subsidiary of **U. S. Steel**), effective August 1, succeeding **O. L. Pringle.** Mr. Pringle has been elected sales vice-president of the Columbia Steel Company, succeeding the late **Frank B. DeLong. H. S. Worthington,** who has held several executive positions with the company, has been appointed assistant to the operating vice-president.

The **Chain Belt Company,** Milwaukee, Wis., has appointed **Douglas Jones** as manager of the firm's Salt Lake City (Utah) district office. He will operate his business as the **Douglas Jones Company,** 1551 Redondo avenue.

Carl D. Smith has joined the **LeTourneau Company** as special representative of the sales division, with headquarters at Peoria, Ill. Mr. Smith was formerly associated with the Firestone Tire & Rubber Co.

OBITUARY

William Hugh Coverdale, 78, one of the founders of the consulting engineering firm of Coverdale & Colpitts, died at St. Clare's Hospital, New York, on August 10.

G. H. Houston, industrial consultant and president of the Baldwin Locomotive Works from 1929 to 1938, was killed recently in an automobile accident in Teziutlen, Mexico. He was 66 years old.

W. J. Lynch, retired vice-president and director of the American Steel Foundries, died on August 4, in the Lawrence Hospital, Bronxville, N. Y. Mr. Lynch began his career at Cleveland, Ohio, with the Bee Line, which was consolidated with the Cleveland, Cincinnatti, Chicago & St. Louis (New York Central) in 1889, and, before he joined American Steel Foundries in 1911, was associated with the New York Central.

William Lloyd, designer of coal stokers and a consultant on stoker engineering for Combustion Engineering-Superheater, Inc., died on August 7. He was 82 years old.

ABANDONMENTS

Division 4 of the Interstate Commerce Commission has **authorized:**

Chicago, Burlington & Quincy.—To discontinue a free Ohio river towage service between Metropolis, Ill., and Paducah, Ky., 12 mi. The Burlington had also asked for authority to abandon approximately 5,900 ft. of switching tracks at Metropolis along with the towage service. The commission, however, denied this part of the application, ruling that use of the incline and track facilities shows a public need for those facilities for interchange of traffic between the water and rail carrier at the river bank.

Virginian.—To abandon trackage rights and operation over the Chesapeake & Ohio's Glen Jean subdivision from Pax, W. Va., through Sugar Creek Junction to Oswald and to Garden Ground, 18.2 mi. The report noted that the Virginian will continue by joint publication with the C.&O. the present rates on traffic originating on the branch destined to points on the Virginian.

FINANCIAL

Baltimore & Ohio.—*Acquisition of Lessors' Lines.*—This road has applied to the Interstate Commerce Commission for authority to acquire the franchises, rights and properties of its wholly owned subsidiaries, the Baltimore & Ohio & Chicago and the B.&O. Southwestern, which companies it proposes to dissolve. The former line includes 278 mi. in Ohio and Illinois and the latter includes 937 mi. in Ohio, Illinois and Indiana. The transaction would involve no payment by the parent company other than the surrender of the lessors' capital stock for cancellation. The application said the proposed plan contemplates savings in bookkeeping, taxes and other expenses incidental to the maintenance of a separate corporate existence.

Hudson & Manhattan.—*Appoints Real Estate Agent.*—This road has appointed Spear & Co. as management and renting agents for all of its rental properties in New York, Jersey City, N. J., Newark and Hoboken. The appointment involves the supervision of all office and loft buildings, stores and terminal concessions operated by the H. & M. in the four cities.

New Securities

Applications have been filed with the Interstate Commerce Commission by:

International-Great Northern.—To assume liability for $1,710,000 of series CC equipment trust certificates to finance in part acquisition from the Electro-Motive Division of General Motors Corporation of the following equipment:

	Description	Estimated Unit Cost
2	4,500-hp. Diesel-electric freight locomotives, each consisting of two 1,500-hp. "A" units and one 1,500-hp. "B" unit	$453,772
4	3,000-hp. Diesel-electric freight locomotives, each consisting of two 1,500-hp. "A" units	310,770

Total estimated cost of the equipment is $2,150,624. The certificates would be dated August 15, would mature in 15 annual installments of $114,000 each, beginning August 15, 1950, and would be sold on the basis of competitive bids.

Missouri Pacific.—To assume liability for $5,025,000 of series MM equipment trust certificates to finance in part the acquisition of the following equipment:

	Description and builder	Estimated Unit Cost
2	1,000-hp. Diesel-electric switching locomotives (American Locomotive Company)	$99,196
1	3,000-hp. Diesel-electric freight locomotive consisting of two 1,500-hp. "A" units (Electro-Motive Division, General Motors Corporation)	310,770
4	4,000-hp. Diesel-electric passenger locomotives, each consisting of two 2,000-hp. "A" units (American)	441,628
8	4,500-hp. Diesel-electric freight locomotives, each consisting of two 1,500-hp. "A" units and one 1,500-hp. "B" unit (Electro-Motive)	453,772
1	All-stainless steel diner-lounge car (Budd Company)	124,970
2	All-stainless steel sleeping cars, consisting of 6 double bedrooms and 10 cabins (Budd)	126,822

Total estimated cost of the equipment is $6,284,464. The certificates would be dated August 15, would mature in 15 annual installments of $335,000 each, beginning August 15, 1950, and would be sold on the basis of competitive bids.

St. Louis, Brownsville, & Mexico.—To assume liability for $1,020,000 of series CC equipment trust certificates to finance in part the acquisition, from the Electro-Motive Division of General Motors Corporation, of the following equipment:

	Description	Estimated Unit Cost
2	3,000-hp. Diesel-electric freight locomotives, each consisting of two 1,500-hp. "A" units	$310,770
2	3,000-hp. Diesel-electric freight locomotives, each consisting of two 1,500-hp. "A" units	331,868

Total estimated cost of the equipment is $1,285,276. The certificates would be dated August 15, would mature in 15 annual installments of $68,000 each, beginning August 15, 1950, and would be sold on the basis of competitive bids.

Division 4 of the I.C.C. has **authorized:**

Kansas City Southern.—To assume liability for $3,990,000 of series I equipment trust certificates to refinance balances due on 1,194 box cars purchased in 1947 and 1948 under conditional sales agreements, and to finance in part the acquisition of 100 new all-steel 70-ton hopper cars (see *Railway Age* of July 23, page 55). The certificates will be dated August 1 and will mature in 30 semiannual installments of $133,000 each, beginning February 1, 1950. The commission's report approved a selling price of 100.779 with a 2½ per cent interest rate—the bid of Halsey, Stuart & Co. and six associates, which will make the average annual interest cost approximately 2.38 per cent. The certificates were reoffered to the public at prices yielding from 1.1 to 2.675 per cent according to maturity.

Average Prices Stocks & Bonds

	Aug. 9	Last week	Last year
Average price of 20 representative railway stocks	38.54	37.51	47.94
Average price of 20 representative railway bonds	85.29	85.47	89.96

Dividends Declared

North Pennsylvania.—$1.00, quarterly, payable August 25 to holders of record August 18.

CONSTRUCTION

Atchison, Topeka & Santa Fe.—This road has awarded contracts to the Ellington Miller Company, Chicago, for conversion of three stalls of the 18th street roundhouse in that city for installation

of coach air-conditioning equipment and repair shop; and for repairs to bridge 5-A, Kedzie Avenue subway, Chicago.

Illinois Central.—This road's 1949 rail program involves the laying of 68,000 tons of new rail on 340 mi. of track, including 19 mi. of 132-lb. rail, 306 mi. of 115-lb. and 15 mi. of 90-lb. The latter is being placed on the Chicago suburban system. All the 132-lb. rail is being laid on the Fulton district of the Kentucky division, between Fulton, Ky., and Woodstock, Tenn., a district which handles heavy freight traffic.

OVERSEAS

To Study Uniform Accounting For European Railways

A group of experts on railway accounting, which met recently at Geneva, Switzerland, has agreed on the desirability of establishing a uniform system of accounting for European railways. Such a system, it was felt, would be an important step toward harmonizing transport in Europe, as it would permit accurate comparison of results achieved by the various railway systems.

The group, which will meet again in November, was set up by the Inland Transport Committee of the United Nations Economic Commission for Europe. It includes representatives from Austria, Belgium, France, Italy, the Netherlands, Norway, Poland, Sweden, Switzerland, the United States, and the occupation authorities in Germany.

Brazil.—This country's government recently purchased the British-owned Leopoldina Railway for $40,000,000 and signed an agreement to rescind the lease under which the Great Western of Brazil has been operated. The latter road, although owned by the Brazilian government, has been leased to and worked by a British-owned corporation, which, according to the agreement, will receive payment of $14,680,000.

India.—This country's government is said to be trying to reduce air fares, which vary from 6 cents to 9 cents a mile, to the level of current first-class railroad fares, which are approximately 4 cents a mile, according to a recent issue of Foreign Commerce Weekly. The air lines oppose the reduction on the ground that even at present rates many of them are operating at a loss. The government, as an inducement, since April 1 has rebated half the customs duty on gasoline purchased by the air lines, a reduction of about 14 cents a gallon which, it is estimated, will cost the government approximately $1,260,000 a year.

India.—The International Bank for Reconstruction and Development has announced receipt of a formal application from the government of India for assistance in financing, among other things, rehabilitation of the Indian railways. It is expected that details of the loan agreement will be completed soon. The bank already has completed its investigation of the railway project, which includes the purchase of locomotives and parts and tank cars. (See *Railway Age* of January 29, page 43.)

RAILWAY OFFICERS

EXECUTIVE

Frank H. Daggett, whose appointment as vice-president and general manager of the Bangor & Aroostook at Bangor, Me., was reported in the *Railway Age* of June 11 was born at Hodgdon, Me., on December 8, 1880, and entered railroad service in 1897 as telegraph operator with the Bangor & Aroostook. After serving successively as operator, station agent, train dispatcher and chief train

Frank H. Daggett

dispatcher, Mr. Daggett was appointed superintendent car service in September, 1917. He became superintendent of the Northern division at Houlton, Me., in June, 1931, transferring to the Southern division at Bangor on May 1, 1939. Mr. Daggett was appointed general manager of the road in October, 1947, which position he will continue to hold in addition to the vice-presidency.

William Bamert has been appointed assistant to vice-president, accounting, of the Chesapeake & Ohio, with headquarters at Cleveland, Ohio. Mr. Bamert, who is 35 years old, became associated with the General Electric Company at Schenectady, N. Y., shortly after his graduation from Lehigh University in 1935. In 1940 he was assigned to the air conditioning department of that company at Bloomfield, N. J., and subsequently served successively as director of the budget, manager of credits and collections, and manager of the sales administration division, the position from which he resigned to accept his C. & O. appointment. In this assignment Mr. Bamert will be concerned mainly with organization planning and personnel development within the accounting department.

F. J. Ivimey has been appointed assistant to the president of the Algoma Central & Hudson Bay, with headquarters at Sault Ste. Marie, Ont.

Charles Edward Smith, whose retirement as vice-president, purchases and stores of the New York, New Haven & Hartford at New Haven, Conn., was announced in the *Railway Age* of August 6, will celebrate his 72nd birthday on August 20. Born in Somerville, Mass., Mr. Smith is a graduate of the Massachusetts Institute of Technology (B.S. in civil engineering, 1900). He began his railroad career even before the completion of his schooling at M.I.T., by working in the engineering department of the New York & New England (now New Haven) during 1897. From 1898 to 1900, he was engaged in public improvement work in eastern Connecticut, and in the latter year, shortly after his graduation, he went with the New Haven as a bridge department employee. During 1903 he served in the bureau of yards and docks, United States Navy, and in 1904 he became assistant bridge engineer of the Lake Shore & Michigan Southern (now New York Central), remaining in this employ until 1906, when he became associated with the International Correspondence Schools. He returned to railroading in 1907 as bridge engineer and assistant chief engineer — also serving

Charles E. Smith

as acting chief engineer — of the Missouri Pacific.

In 1916 Mr. Smith organized the consulting engineering firm of C. E. Smith & Co., in St. Louis, Mo., and engaged in private practice until 1927, with the exception of one year during World War I when he was a major in the construction division of the United States Army. It was during this period of private practice that Mr. Smith was

consultant on railroad and public utility problems to several cities including St. Louis, New York and New Orleans, La.

Mr. Smith returned to the New Haven on January 1, 1928, as vice-president to assist the president directly, in matters assigned to him. He has been in charge of purchases and stores on the road since 1929.

Mr. Smith's versatility, coupled with his very active interests, led him into a variety of phases of railroading and social and civic life. It was he who inaugurated and for 10 years administered free pick-up and delivery of less-than-carload freight on the New Haven. For several years he was in charge of operation of the New England Transportation Company, the New Haven's highway subsidiary. Recently, construction of the road's new office building in New Haven was completed under his supervision. During his earliest years with the New Haven — directly after his graduation from M.I.T. — he designed many bridges, including those now carrying the New Haven through Bridgeport, Conn., and across the Naugatuck and Housatonic rivers at Derby, Conn., and Shelton. During World War II, from 1941 to 1943, he was furloughed by the New Haven for service with the War Production Board at Washington, D. C., and again, more recently, for service with the so-called Hoover Commission for the reorganization of the executive branch of the federal government.

Mr. Smith has been a member of the State of Connecticut Development Commission since its organization originally in 1935 as the State Publicity Commission. Active for many years in the New Haven Advertising Club, he served as its president in 1942 and 1943. He is also a past president of the American Railway Bridge and Building Association; New York Railroad Club; Connecticut Section — American Society of Civil Engineers; Connecticut Association of Purchasing Agents, and the Alumni Association of M.I.T., and a director of the New Haven Chamber of Commerce.

He will continue to serve as vice-president in charge of operation of the County Transportation Company, a subsidiary of the New York, New Haven & Hartford.

Vernon C. Mickelson, chief of wage and salary administration, Chesapeake & Ohio, at Cleveland, Ohio, has been appointed assistant to vice-president—personnel, with headquarters at Detroit, Mich. His former position has been abolished.

J. C. James, whose election as executive vice-president and general counsel of the Chicago, Burlington & Quincy at Chicago, was reported in the *Railway Age* of August 6, was born at Aurora, Ill., on February 21, 1882, and was graduated from the University of Wisconsin in 1904 and George Washington University Law School. Following admission to the bar in 1905 he engaged in general practice in Aurora until 1914, when he became local attorney for the Burlington. In 1917 he was appointed assistant to the road's Illinois district attorney, with headquarters at Chicago,

J. C. James

and two years later was advanced to general attorney. Mr. James became general solicitor in 1924 and was promoted to general counsel in 1938. He was elected vice-president and general counsel in the next year, which positions he held until his recent advancement.

Samuel L. Fee, whose promotion to vice-president—operation of the Chicago, Burlington & Quincy, at Chicago, was reported in the *Railway Age* of August 6, was born on October 9, 1889, at Knoxville, Iowa. He joined the Burlington in 1906, and served successively until 1917 as telegraph operator, brakeman, fireman, clerk in the industrial department and clerk in the passenger traffic department. In 1917 Mr. Fee was appointed general agent for troop movement under the United States Railroad Administra-

Samuel L. Fee

tion, with headquarters at Rockford, Ill. He was appointed trainmaster on the Burlington in 1919, and later that year became superintendent of terminals at St. Louis, Mo. In 1920 he was again appointed trainmaster, and during 1926 and 1927 served on the staff of the road's general manager. He was promoted to division superintendent at Centerville, Iowa, in 1927, and held this position later at Alliance, Neb., LaCrosse, Wis., Lincoln, Neb., and Aurora, Ill. He was further advanced to general superintendent at Lincoln in 1936, and in 1939 was transferred to Galesburg, Ill. Mr. Fee became general manager, Lines West, at Omaha, Neb., in November, 1947, which position he held at the time of his recent promotion.

FINANCIAL, LEGAL & ACCOUNTING

Julian C. Sipple, attorney in the law department of the Central of Georgia, has been appointed to the newly-created position of assistant general solicitor, with headquarters as before at Savannah, Ga. Mr. Sipple is succeeded as attorney by **Griffin B. Bell,** who has been associated with the C. of G. as law clerk in the office of the general counsel since last year.

Ralph C. Smith, whose appointment as assistant general auditor of the Chicago, Burlington & Quincy, at Chicago, was reported in the *Railway Age* of July 23, was born on April 15, 1892, at Trilla, Ill., and received his higher education at Shelby College. He entered railroad service with the Burlington in May, 1913, serving in various positions in the office of the auditor of freight accounts at Chicago until his appointment as traveling auditor in 1918. He subsequently held the same position on various divisions and, from 1923 to 1927, served as chief clerk in the auditor of ticket accounts' office and the comptroller's office at Chicago. He was later promoted to assistant auditor of freight accounts at that point, becoming assistant auditor of expenditures there in 1932. Mr. Smith was advanced to general auditor of the Colorado & Southern (part of the Purlington Lines) at Denver, Colo., in February, 1936, and was serving in that post at the time of his recent appointment.

OPERATING

George F. Bacon, whose appointment as superintendent passenger transportation of the Boston & Maine, with headquarters at Boston, Mass., was announced in the *Railway Age* of August 6, was born at Somerville, Mass., on May 28, 1888. He entered railroad service as an assistant agent of the B. & M. in 1904, and subsequently served as messenger to general superintendent; file clerk; general clerk and later transportation clerk to general superintendent; train clerk in executive department, and transportation clerk to general manager.

The following trainmasters of the Chicago, Milwaukee, St. Paul & Pacific have been transferred as indicated: **M. T. Sevedge,** from Mason City, Iowa, to Aberdeen, S. D.; **E. P. Snee,** Aberdeen to

Spokane, Wash.; **N. McKegney,** Milwaukee, Wis., to Minneapolis, Minn.; **R. F. Fairfield,** Minneapolis to Tacoma; **S. E. Herzog,** Tacoma to Madison, Wis.; **R. W. Riedl,** Madison to Davenport, Iowa; **J. E. Ryan,** Davenport to Chicago; **R. L. Hicks,** Chicago to Mason City; **J. T. Hayes,** Butte, Mont., to LaCrosse, Wis.; **J. D. Simon,** Green Bay, Wis., to Butte; and **R. C. Jones,** Milwaukee, Wis., to Green Bay.

John F. Fenimore, whose promotion to superintendent, Eastern division, of the Atchison, Topeka & Santa Fe, with headquarters at Emporia, Kan., was reported in the *Railway Age* of July 23, was born on May 3, 1900, at Topeka, Kan. He first entered railroad service with the Santa Fe in August, 1917, as a

John F. Fenimore

mail clerk, and subsequently served in World War I. Following his apprenticeship, he held various posts in the telegraph department and later served as dispatcher, agent-operator, rules examiner and assistant trainmaster. In 1943 Mr. Fenimore was appointed trainmaster at Newton, Kan., and in 1946, was transferred to Arkansas City, Kan., where he was located at the time of his promotion.

Harry A. Butler, manager of the Southern Pacific's dining car department, with headquarters at San Francisco, Cal., will retire, at his own request, on September 1.

R. R. Tulloch, superintendent, Lake Superior division, of the Railway Express Agency, at Duluth, Minn., has been appointed superintendent of organization, with headquarters at St. Paul, Minn.

E. G. Wesson, superintendent, Aurora-La Crosse division, of the Chicago, Burlington & Quincy, at Aurora, Ill., has been promoted to general superintendent, Omaha (Neb.)-Lincoln and Wymore divisions, succeeding the late **W. P. Wilson,** whose death is reported elsewhere in this issue. **Andrew E. Stoll,** superintendent of the Galesburg-Beardstown division, at Galesburg, Ill., has succeeded Mr. Wesson.

C. J. Nelson, whose retirement as superintendent, Chicago Car Interchange Bureau, was reported in the *Railway Age* of July 16, was born at Beftoft, Denmark, on July 1, 1874. He entered railroad service in April, 1899, with the Chicago & North Western at Clinton, Iowa, serving as car repairer and inspector until his promotion to chief inspector at that point in 1902. Five years later he was appointed assistant car foreman at Clinton, being advanced to general car

C. J. Nelson

foreman there in 1910. From 1915 to 1919 he served as general traveling inspector, with headquarters at Chicago. Mr. Nelson subsequently became district general foreman at Chicago, and was promoted to district master car builder at that point in 1920. He was appointed superintendent, Chicago Car Interchange Bureau, in March, 1925.

Otto H. Zimmerman, Jr., trainmaster of the Illinois Central at Louisville, Ky., has been promoted to superintendent, Springfield division, at Clinton, Ill., succeeding **Ernest H. Hallman,** whose appointment as manager of personnel at Chicago is noted elsewhere in these columns.

TRAFFIC

R. B. Weaver, general passenger agent of the Gulf, Mobile & Ohio, at Chicago, has been advanced to assistant passenger traffic manager at St. Louis, Mo., succeeding **A. L. Jackson,** whose death was reported in the *Railway Age* of July 30. Succeeding Mr. Weaver is **W. R. Godley,** district passenger agent, Detroit, who in turn is succeeded by **L. L. Deck.**

Giles G. Truesdale, assistant passenger traffic manager of the Illinois Central at Chicago, will retire on September 15 after nearly 45 years of service with that road. **George R. Kimbel,** general passenger agent at New Orleans, La., will succeed Mr. Truesdale and will be replaced in turn by **Bernard J. Grenrood,** city passenger agent at that point.

Mr. Truesdale was born at Richmond, Ill., on January 19, 1884, and was graduated from Hyde Park High School, Chicago. He entered I. C. service as a transportation clerk in July, 1901, and became traveling passenger agent at Cincinnati, Ohio, in 1906, being advanced to city passenger and ticket agent at that point the following year. From 1908 to 1911 he served as city passenger agent at Chicago. He subsequently became district passenger agent at Pittsburgh, Pa., and in 1917 was transferred to New York as commercial agent. He left the I. C. in 1918 to join the Radium Chemical Company at Pittsburgh, returning to the I. C. in 1921 as assistant general passenger agent, at Chicago. Mr. Truesdale was advanced to general passenger agent in 1927 and was appointed assistant passenger traffic manager in April, 1944.

Mr. Kimbel, who was born on December 5, 1901, at Dubuque, Iowa, attended Cutler Business College in his home town and also studied with International Correspondence Schools. He entered railroad service with the I. C. in May, 1917, as a clerk in the passenger traffic office at Dubuque, and subsequently served in various capacities until his promotion to traveling passenger agent at Minneapolis, Minn., in 1822. He was appointed assistant general passenger agent at St. Louis, Mo., in 1930, and was transferred to Memphis, Tenn., a year later, returning to St. Louis as district passenger agent in 1935. From 1937 to 1944 Mr. Kimbel served as general passenger agent at St. Louis, and was next appointed assistant general passenger agent at Chicago. He was transferred to New Orleans in January, 1946, advancing to general passenger agent there the following May.

Mr. Grenrood is a native of New Orleans and served with the Texas Pacific-Missouri Pacific Terminal for 20 years before joining the I.C. in August, 1938, as a ticket salesman. He was appointed city passenger agent in July, 1946.

C. LaDue Norwood, district superintendent of colonization of the Canadian Pacific at Montreal, Que., has retired and his post has been assigned to **J. C. Robertson,** who has been serving as traveling colonization agent at Montreal since 1937.

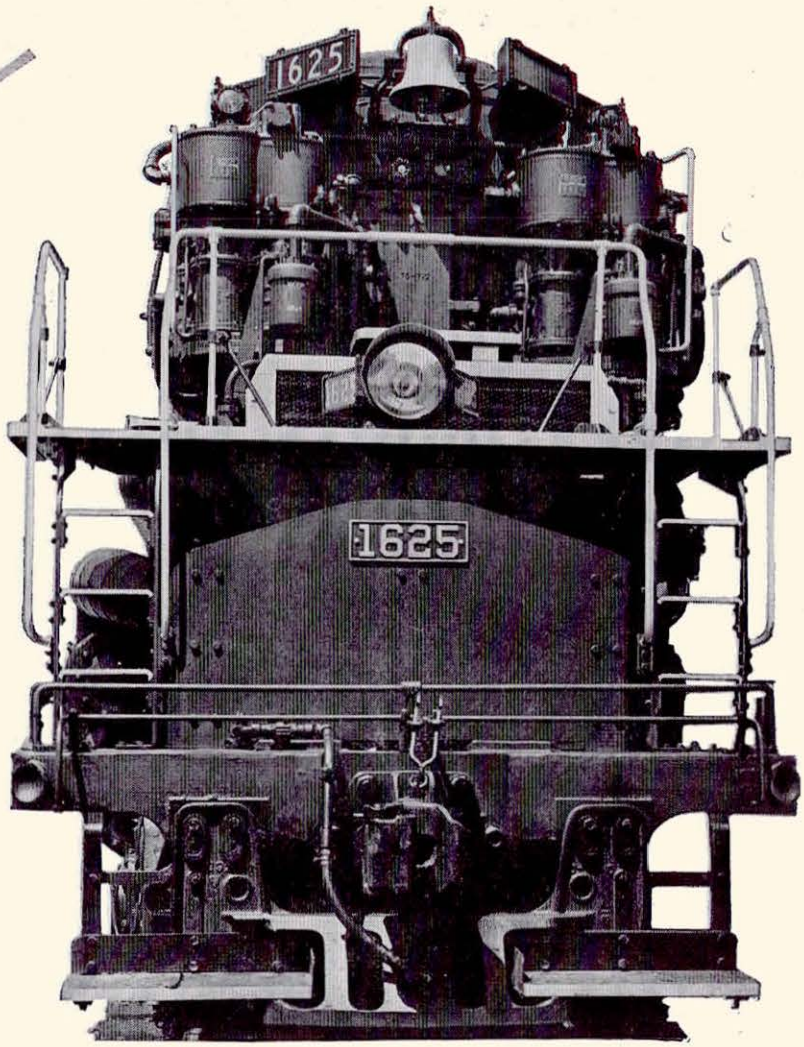
Ralph A. Foral, freight traffic agent of the Union Pacific at Omaha, Neb., has been advanced to general agent, freight department, for the road's Omaha and Council Bluffs (Iowa) area.

Edward A. Olson, commercial agent in charge of grain and flour traffic of the Minneapolis & St. Louis at Minneapolis, Minn., has been promoted to general agent at Duluth, Minn., succeeding the late **Thomas J. Pewters,** whose death was reported in the *Railway Age* of July 23.

John C. Gutsch, whose retirement as freight traffic manager of the Chicago, Rock Island & Pacific at Chicago, was reported in the *Railway Age* of August 6, was born at St. Louis, Mo., on October 24, 1880, and attended the public schools. He entered Rock Island serv-

News Department continued on next left-hand page

A unit of POWER



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LIMA HAMILTON CORPORATION

DIVISIONS: *Lima, Ohio* — Lima Locomotive Works Division; Lima Shovel and Crane Division. *Hamilton, Ohio* — Hooven, Owens, Rentschler Co.; Niles Tool Works Co. *Middletown, Ohio* — The United Welding Co.

PRINCIPAL PRODUCTS: Locomotives; Cranes and shovels; Niles heavy machine tools; Hamilton diesel and steam engines; Hamilton heavy metal stamping presses; Hamilton-Kruse automatic can-making machinery; Special heavy machinery; Heavy iron castings; Weldments.

ice in 1897 at Topeka, Kan., and six years later became chief clerk in the Chicago offices. He was appointed assistant general freight agent in 1915 and assistant to freight traffic manager in 1925. Mr. Gutsch became assistant freight traffic manager in 1926, and was promoted in 1940 to freight traffic manager.

Charles E. Healey, traveling freight agent of the Chicago & Eastern Illinois, has been promoted to general agent of the Mt. Vernon (Ill.) section of the C. & E. I., succeeding the late **C. C. King.**

S. H. Hill has been appointed general agent of the Norfolk & Western at Memphis, Tenn.

O. B. Sandidge has been appointed general agent of the Fort Worth & Denver City at San Antonio, Tex., succeeding **S. B. Gimble,** who has retired because of ill health.

Luther F. Jacobs, district passenger agent of the Pennsylvania, at Norfolk, Va., has been transferred in that position to Louisville, Ky.

David H. Wallace, perishable freight agent of the St. Louis Southwestern at Los Angeles, Cal., will become general agent at Phoenix, Ariz., on August 15, succeeding **Charles C. Hamby,** who has resigned to enter private business.

MECHANICAL

H. W. Hayward, shop engineer, Angus shops, Montreal, Que., of the Canadian Pacific, has been appointed to the newly-created position of engineer of standards and methods at Montreal. Mr. Hayward is a native of Swindon, England, and has been associated with the C.P.R. since 1928. In his new position he will have system-wide jurisdiction over standards and methods for maintenance of equipment.

J. L. Savage, assistant superintendent of the Chesapeake & Ohio's Huntington (W.Va.) shops, has been appointed shop superintendent there. He is succeeded by **J. C. Smith,** formerly master mechanic, Chicago division, at Peru, Ind., who is in turn succeeded by **L. H. Booth,** formerly general roundhouse foreman.

Hugo M. McInnis, assistant to the chief mechanical officer, Chesapeake & Ohio, at Detroit, Mich., has been appointed assistant superintendent of motive power, Pere Marquette district, with headquarters at Grand Rapids, Mich. His former post has been abolished.

C. A. Moody, superintendent of shops of the Chicago, Burlington & Quincy and the Colorado & Southern (part of the Burlington Lines) at Denver, Colo., has also been appointed superintendent of motive power of the C. & S. at that point. He succeeds **W. F. Kascal,** whose appointment as mechanical superintendent of the Texas & Pacific at Dallas, Tex., was reported in the *Railway Age* of July 30. Mr. Moody was born on January 3, 1898, at Havelock, Neb., where he entered railroad service with the Burlington in 1914. After serving as apprentice machinist in the Havelock shops he became a machinist in the roundhouse at Lincoln, Neb., and later held positions successively as gang foreman, erecting shop foreman and general foreman at Havelock. In 1931 he was transferred to the Denver shops as general foreman and in 1939 was appointed to the same position in the manufacturing department at Aurora, Ill. He served as general foreman of the manufacturing and car departments at Aurora from 1940 to 1944, when he became acting shop superintendent at Denver, with jurisdiction over the terminal mechanical department facilities. The following July he was appointed assistant shop superintendent at Denver, and in April, 1946, was transferred to Sheridan, Wyo., as assistant master mechanic. Mr. Moody returned to Denver as superintendent of shops in August, 1947. In his new post he retains jurisdiction over the Denver shops.

PURCHASES & STORES

H. V. Pembleton, district storekeeper of the New York, New Haven & Hartford at Van Nest shops, New York, has been promoted to general storekeeper at New Haven, Conn., succeeding **C. Harry McGill,** whose promotion to manager, purchases and stores, was announced in the *Railway Age* for August 6. **C. M. Kelley,** formerly chief clerk to general superintendent, has been appointed assistant to general storekeeper, and **I. G. Shapiro,** traveling storekeeper at New Haven, succeeds Mr. Pembleton as district storekeeper. Mr. Shapiro will have his headquarters at New Haven and **R. M. Fraser,** who retains the title of assistant district storekeeper, Van Nest shops, will be in charge of stores at Van Nest. **P. J. Guarino,** stockman at Readville, Mass., has been appointed traveling storekeeper at New Haven, succeeding Mr. Shapiro.

J. A. Heatly has been appointed division storekeeper of the Missouri Pacific Lines, with headquarters at De Quincy, La., succeeding **R. T. Kennedy,** granted a leave of absence.

James Roy Fullerton, whose promotion to general storekeeper of the Missouri Pacific Lines, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of July 30, was born on July 27, 1894, at Sedalia, Mo. He began his railroad career with the M. P. in May, 1910, as a messenger, and served successively as clerk, store room foreman and general foreman in his home town. In 1918 he joined the United States Navy, and the following year returned to the M. P. as general foreman. He was appointed acting district storekeeper at Sedalia in 1943 and was transferred to St. Louis in April, 1946, as traveling storekeeper. Mr. Fullerton held the latter position at the time of his promotion.

ENGINEERING & SIGNALING

Peter C. Fuller, roadmaster for four of the Canadian Pacific's subdivisions, with headquarters at Woodstock, N. B., has been appointed division engineer of the Schreiber division with headquarters at Schreiber, Ont.

SPECIAL

Theodore S. Roscoe has been appointed public relations assistant of the New York, New Haven & Hartford, with headquarters at Boston, Mass. Mr. Roscoe resigned as account executive of Fosdick, Payson & Co., advertising agency, of Portland, Me., to accept this post with the New Haven.

C. R. Young, director of personnel, Illinois Central, at Chicago, will retire on September 1, and will be succeeded by **Gideon J. Willingham,** manager of personnel at that point. **Ernest H. Hallman,** superintendent, Springfield division, at Clinton, Ill. will replace Mr. Willingham.

OBITUARY

C. C. King, general agent of the Chicago & Eastern Illinois at Mt. Vernon, Ill., died on August 1, at the age of 68. Mr. King, who was to have retired on September 1, had served almost 48 years with the C. & E. I.

John M. Doorly, retired assistant chief engineer, Lines Buffalo and East, of the New York Central, died at St. John's Riverside Hospital, Yonkers, N. Y., on August 4. Mr. Doorly, a native of Jamaica, B.W.I, was born on May 7, 1877, and entered railroad service with the N.Y.C. on May 15, 1905, as a draftsman assigned to the West Side improvements on Manhattan island during the early planning stage of that program. He was appointed assistant engineer on November 1, 1906, and assigned to the project involving construction of Grand Central Terminal and electrification of its approaches. From January 1, 1914, to January 1, 1927, he served as assistant engineer, West Side improvements, becoming engineer, New York Terminal district, on the latter date. In that capacity he participated in the actual execution of the West Side improvements, and also helped resolve many of the problems incident to building the West Side express highway. Mr. Doorly was promoted to assistant chief engineer, Buffalo and East, in April, 1938, and held that post until his retirement on September 30, 1946.

W. P. Wilson, general superintendent of the Omaha (Neb.)-Lincoln and Wymore divisions of the Chicago, Burlington & Quincy, at Lincoln, Neb., died on July 12. A photograph and biographical sketch of Mr. Wilson appeared in the *Railway Age* of November 13, 1948, page 69, in connection with his promotion to general superintendent at Lincoln.

88

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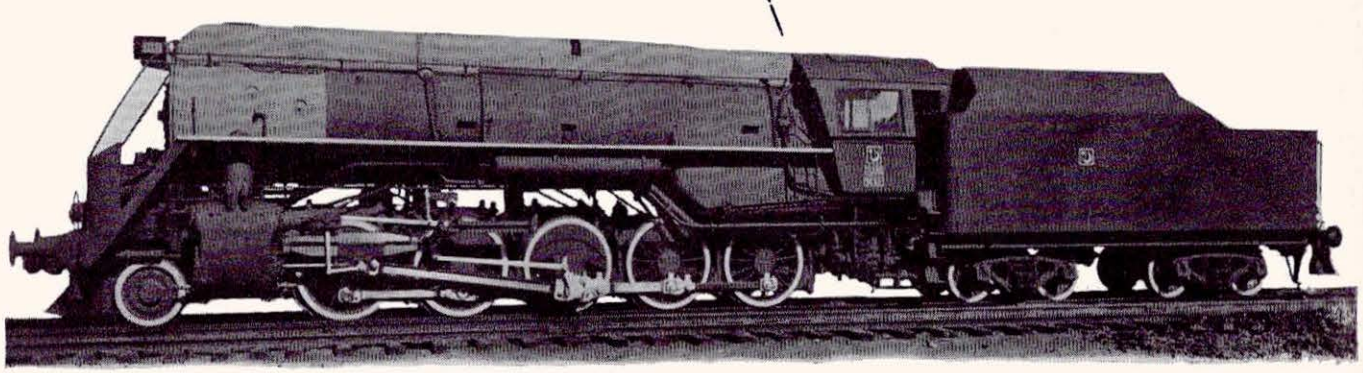


Freight Operating Statistics of Large Steam Railways — Selected

	Region, road and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excl. locos. & tenders	Ton-miles (*thousands*): Net rev. and non-rev.	Road-locos. on lines: Serviceable: Unstored	Road-locos. on lines: Serviceable: Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per cent B.O.
New Eng. Region	Boston & Maine 1949	1,746	272,317	280,922	13,590	10,295	68.7	638,912	269,169	100	16	12	9.4
	1948	1,746	308,734	319,575	16,370	11,831	70.0	744,700	325,171	88	4	20	17.9
	N. Y., N. H. & Htfd 1949	1,774	277,291	278,786	22,967	11,235	67.1	689,197	296,153	110	8	12	9.2
	1948	1,815	347,719	351,131	28,119	13,898	69.9	844,273	377,421	135	16	36	19.3
Great Lakes Region	Delaware & Hudson 1949	794	256,172	304,266	31,378	10,594	66.4	755,304	386,244	129	52	20	10.0
	1948	794	287,208	350,852	39,240	12,803	68.6	918,062	495,467	140	30	24	12.4
	Del., Lack. & Western 1949	967	282,014	326,055	37,004	12,536	66.5	849,036	383,505	104	16	24	16.7
	1948	970	319,229	357,999	37,140	14,063	70.1	935,990	443,610	104	27	19	12.7
	Erie 1949	2,231	605,757	626,879	45,409	31,790	64.5	2,068,691	839,844	183	72	43	14.4
	1948	2,229	691,767	735,688	60,541	36,434	65.8	2,439,541	1,076,582	249	43	78	21.1
	Grand Trunk Western 1949	971	258,487	265,636	2,760	8,704	61.4	596,999	244,872	56	2	7	10.8
	1948	972	298,094	306,359	3,883	9,769	66.7	654,493	297,070	65	3	14	17.1
	Lehigh Valley 1949	1,239	246,740	269,258	29,928	11,647	66.0	816,620	383,641	72	12	17	16.8
	1948	1,239	319,039	357,253	49,871	13,457	68.5	921,744	458,202	92	5	42	30.2
	New York Central 1949	10,689	3,099,504	3,311,019	199,202	108,114	59.6	7,700,855	3,430,825	991	141	325	22.3
	1948	10,704	3,445,382	3,697,189	253,635	124,689	62.9	8,844,255	4,182,080	1,081	82	340	22.6
	New York, Chic. & St. L. 1949	1,656	551,401	561,712	4,883	22,775	62.7	1,527,536	625,850	135	34	16	8.7
	1948	1,656	622,975	632,534	8,332	25,760	68.6	1,657,994	739,056	136	15	18	10.7
	Pitts. & Lake Erie 1949	221	87,815	90,775	.....	3,741	69.8	319,036	197,288	35	5	12	23.1
	1948	223	96,092	98,377	43	4,696	69.8	396,662	244,039	32	..	15	31.9
	Wabash 1949	2,381	533,488	540,804	8,934	19,088	66.5	1,239,743	507,034	145	18	41	20.1
	1948	2,381	639,793	652,979	15,366	23,371	70.5	1,491,966	663,418	152	15	36	17.7
Central Eastern Region	Baltimore & Ohio 1949	6,086	1,894,948	2,316,036	256,744	68,044	60.7	5,256,857	2,607,317	763	50	262	24.4
	1948	6,076	2,063,980	2,550,318	283,269	74,052	63.9	5,532,998	2,800,646	814	1	321	28.3
	Central of New Jersey* 1949	415	68,898	69,114	4,913	2,666	63.0	201,486	102,696	31	3	9	20.9
	1948	417	81,339	85,194	8,971	3,316	66.5	249,248	131,268	38	2	22	25.5
	Central of Pennsylvania 1949	212	73,336	80,347	11,815	2,719	63.1	205,461	107,659	36	3	17	30.4
	1948	213	80,345	91,271	16,879	3,231	69.4	238,148	131,278	34	2	14	28.0
	Chicago & Eastern Ill 1949	909	122,985	123,252	2,529	4,504	68.4	291,757	135,842	31	21	7	11.9
	1948	909	182,663	183,453	3,851	5,974	68.0	412,101	209,614	50	..	18	26.5
	Elgin, Joliet & Eastern 1949	238	93,898	94,385	26	3,456	66.3	268,641	147,125	41	2	..	..
	1948	391	116,406	119,868	3,266	3,992	67.7	310,771	172,119	42	..	2	4.5
	Pennsylvania System 1949	10,039	3,206,341	3,582,785	416,874	130,996	61.1	9,741,018	4,646,549	1,441	121	342	18.0
	1948	10,023	3,938,270	4,452,573	584,922	160,902	64.5	11,703,290	5,866,014	1,830	30	253	12.0
	Reading 1949	1,323	395,966	415,399	33,565	14,529	62.5	1,159,141	623,349	169	51	33	13.0
	1948	1,350	467,707	498,071	46,679	17,248	65.0	1,343,198	743,218	211	16	31	12.0
	Western Maryland 1949	836	184,437	227,585	32,393	6,540	59.6	550,232	297,143	151	16	13	7.2
	1948	837	218,487	263,806	39,534	7,831	62.1	643,058	353,996	154	3	14	8.2
Pocahontas Region	Chesapeake & Ohio 1949	5,031	1,546,228	1,649,594	72,423	68,500	56.2	5,968,719	3,314,194	545	20	127	18.4
	1948	5,003	1,732,781	1,866,451	93,925	78,316	58.8	6,660,576	3,767,229	593	6	98	14.1
	Norfolk & Western 1949	2,107	774,160	820,516	55,711	35,854	55.5	3,277,600	1,786,091	261	40	20	6.2
	1948	2,107	935,802	1,005,581	73,764	43,315	58.7	3,881,280	2,178,933	280	18	18	5.7
Southern Region	Atlantic Coast Line 1949	5,543	887,109	897,314	13,257	22,243	59.1	1,549,689	644,877	349	18	80	17.9
	1948	5,552	1,086,000	1,122,985	15,688	29,237	63.4	1,956,774	862,482	362	..	85	19.0
	Central of Georgia 1949	1,783	253,772	260,105	3,855	6,[illegible]91	70.4	422,688	194,757	103	2	10	8.7
	1948	1,783	326,769	333,449	5,828	8,3[illegible]6	71.9	549,561	267,925	102	1	9	8.0
	Gulf, Mobile & Ohio 1949	2,854	305,050	305,050	76	14,177	72.0	928,218	446,353	78	25	6	5.5
	1948	2,847	362,597	365,151	518	17,409	73.0	1,137,149	563,316	118	15	15	10.1
	Illinois Central 1949	6,544	1,394,846	1,398,739	48,809	48,036	60.4	3,440,920	1,563,154	559	28	78	11.7
	1948	6,581	1,496,058	1,503,015	52,223	54,881	64.6	3,855,881	1,849,472	564	7	93	14.0
	Louisville & Nashville 1949	4,765	1,299,112	1,412,036	36,931	35,336	60.0	2,660,818	1,313,899	385	35	58	12.1
	1948	4,750	1,652,838	1,786,852	50,274	42,993	62.0	3,214,915	1,626,273	411	..	73	15.1
	Nash., Chatt. & St. Louis 1949	1,051	230,581	234,281	4,025	6,327	71.0	402,286	183,251	73	..	3	3.9
	1948	1,051	277,312	292,111	8,468	6,464	75.4	419,356	208,252	82	..	11	11.8
	Seaboard Air Line 1949	4,141	762,369	789,466	12,416	22,201	60.1	1,587,871	650,300	266	8	39	12.5
	1948	4,141	923,598	986,524	12,977	27,631	64.9	1,872,834	815,878	299	2	43	12.5
	Southern 1949	6,382	1,282,102	1,292,393	15,568	36,549	64.7	2,398,617	1,033,449	424	94	145	21.9
	1948	6,449	1,718,488	1,745,936	31,388	46,242	68.2	3,007,403	1,368,726	554	16	110	16.2
Northwestern Region	Chicago & North Western 1949	8,073	854,798	880,614	20,110	28,337	64.4	1,990,490	864,279	321	59	93	19.7
	1948	8,055	1,028,674	1,081,232	28,967	35,675	67.2	2,420,767	1,105,925	364	5	106	22.3
	Chicago Great Western 1949	1,445	158,464	158,818	6,245	7,767	65.2	518,050	222,098	41	2	20	31.7
	1948	1,445	211,473	211,473	8,972	8,982	69.2	589,735	266,000	47	7	23	29.9
	Chic., Milw., St. P. & Pac. 1949	10,663	1,245,665	1,296,090	48,232	42,852	65.1	2,925,692	1,314,670	414	99	79	13.3
	1948	10,663	1,343,603	1,405,350	54,886	44,829	67.0	3,031,011	1,408,624	448	68	88	14.6
	Chic., St. P., Minn. & Omaha 1949	1,606	164,796	168,493	6,248	4,468	71.0	286,663	125,881	71	14	23	21.3
	1948	1,606	201,194	211,737	13,063	5,462	70.8	360,994	163,387	72	1	38	34.2
	Duluth, Missabe & Iron Range 1949	575	158,459	159,626	1,607	8,599	51.0	861,613	518,886	37	..	1	2.6
	1948	569	166,114	166,760	864	9,121	51.4	848,147	508,318	46	..	..	..
	Great Northern 1949	8,222	928,537	925,971	39,063	39,834	65.7	2,933,703	1,475,965	312	88	53	11.7
	1948	8,237	954,769	951,561	40,333	39,183	66.1	2,855,912	1,429,245	338	64	57	12.4
	Minneap., St.P. & S. Ste. M. 1949	4,179	388,662	394,572	6,170	12,092	65.7	811,155	379,089	113	..	22	16.3
	1948	4,180	413,981	424,636	8,407	13,195	69.8	863,005	418,012	126	..	17	11.9
	Northern Pacific 1949	6,592	779,641	814,621	38,308	31,061	69.2	2,125,877	999,318	299	42	64	15.8
	1948	6,613	762,078	796,114	44,915	30,123	71.1	2,011,688	969,902	304	64	47	11.3
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1949	13,103	2,624,305	2,810,725	133,762	102,243	65.5	6,958,31[illegible]	2,730,518	712	116	105	11.3
	1948	13,081	3,032,067	3,238,422	153,759	113,046	65.6	7,637,464	3,048,526	773	67	122	12.7
	Chic., Burl. & Quincy 1949	8,680	1,098,897	1,106,719	37,787	43,627	64.9	3,040,009	1,393,862	336	94	108	20.1
	1948	8,670	1,248,016	1,267,243	40,328	51,015	63.9	3,589,727	1,653,378	383	55	97	18.1
	Chic., Rock I. & Pac. 1949	7,589	1,077,639	1,119,289	13,265	35,184	60.9	2,456,662	1,055,927	269	54	57	15.0
	1948	7,618	1,227,094	1,274,417	18,424	38,828	59.7	2,760,720	1,183,047	292	28	65	16.9
	Denver & R. G. Wn. 1949	2,440	358,100	393,408	48,451	12,727	73.8	849,985	421,728	130	36	43	20.6
	1948	2,443	376,458	423,403	54,636	13,141	73.3	888,066	447,021	140	50	39	17.0
	Southern Pacific 1949	8,089	2,193,555	2,397,283	381,460	86,280	58.1	6,202,347	2,272,314	730	19	175	18.9
	1948	8,106	2,196,322	2,449,946	452,042	87,754	61.6	6,205,700	2,440,190	755	16	165	17.6
	Union Pacific 1949	9,726	2,059,196	2,131,114	146,103	88,667	64.8	5,986,389	2,305,626	506	136	178	21.7
	1948	9,751	2,007,631	2,098,588	156,738	86,462	65.8	5,930,728	2,473,429	474	197	102	13.2
	Western Pacific 1949	1,192	223,499	250,378	25,825	9,721	75.9	615,320	289,719	66	37	21	16.9
	1948	1,192	226,686	249,216	26,773	9,630	76.3	601,728	286,646	65	47	18	13.8
Southwestern Region	International-Gt. Northern* 1949	1,110	216,937	217,832	1,269	6,507	65.1	470,505	211,934	60	5	11	14.5
	1948	1,110	235,402	237,894	1,508	6,476	66.2	451,901	206,269	65	..	12	15.6
	Kansas City Southern 1949	886	176,356	180,565	2,852	8,370	64.3	593,559	276,352	40	9	4	7.5
	1948	885	176,575	179,351	1,468	8,715	65.8	599,802	279,383	41	11	5	8.8
	Mo.-Kans.-Texas Lines 1949	3,241	442,913	447,524	6,288	13,666	61.7	942,505	409,471	103	15	37	23.9
	1948	3,241	508,495	519,748	7,347	16,442	61.3	1,115,326	477,121	123	2	29	18.8
	Missouri Pacific* 1949	6,987	1,307,828	1,342,250	27,573	44,498	62.1	3,093,282	1,311,379	368	26	68	14.7
	1948	6,986	1,501,974	1,546,284	30,960	50,128	62.3	3,523,151	1,535,790	422	..	60	12.4
	Texas & Pacific 1949	1,852	338,616	338,616	9,333	11,670	63.1	798,137	315,298	102	16	4	3.3
	1948	1,852	543,305	543,305	13,482	16,749	60.2	1,201,808	492,462	111	..	15	11.9
	St. Louis-San Francisco 1949	4,614	670,947	678,759	7,090	20,626	63.4	1,427,027	624,297	231	69	47	13.5
	1948	4,615	930,554	964,151	10,787	23,276	62.9	1,613,487	697,607	305	5	29	8.6
	St. Louis Southw. Lines 1949	1,562	341,655	343,185	5,088	13,303	67.9	828,091	370,168	72	26	14	12.5
	1948	1,568	396,908	399,150	5,526	15,798	70.4	988,750	441,984	83	11	13	12.1
	Texas & New Orleans 1949	4,314	785,277	785,279	14,792	23,685	63.2	1,642,513	689,734	199	7	42	16.9
	1948	4,314	959,737	961,174	22,756	26,469	67.7	1,793,109	795,823	202	..	45	18.2

Items for the Month of May 1949 Compared with May 1948

Region	Road	Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos. and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Mi. per loco. per day
New Eng. Region	Boston & Maine	1949	3,148	7,801	10,949	3.4	37,390	2,351	991	26.1	791	44.0	4,973	15.9	80.0
		1948	1,956	9,811	11,767	3.5	38,258	2,418	1,056	27.5	881	45.8	6,008	15.9	101.5
	N. Y., N. H. & Htfd	1949	2,542	14,482	17,024	2.2	37,563	2,495	1,072	26.4	570	32.2	5,385	15.1	80.5
		1948	1,341	17,580	18,921	1.7	35,287	2,431	1,087	27.2	646	34.0	6,708	14.5	70.9
Great Lakes Region	Delaware & Hudson	1949	4,755	5,471	10,226	6.0	53,439	2,964	1,516	36.5	1,163	48.0	15,692	18.1	57.4
		1948	2,526	7,980	10,506	5.8	57,454	3,212	1,734	38.7	1,620	61.0	20,129	18.0	70.2
	Del., Lack. & Western	1949	7,384	9,701	17,085	5.6	44,371	3,064	1,334	30.6	726	35.7	12,793	14.7	90.6
		1948	5,129	11,750	16,879	5.8	44,840	2,987	1,416	31.5	851	38.4	14,753	15.3	94.8
	Erie	1949	13,278	16,664	29,942	8.3	56,695	3,441	1,397	26.4	899	52.8	12,143	16.6	80.1
		1948	6,473	26,358	32,831	4.0	56,708	3,552	1,568	29.5	1,099	56.6	15,580	16.1	75.9
	Grand Trunk Western	1949	5,460	8,058	13,518	9.9	48,505	2,333	957	28.1	602	34.9	8,135	21.0	140.8
		1948	4,578	9,674	14,252	6.3	44,614	2,216	1,006	30.4	681	33.6	9,859	20.3	137.3
	Lehigh Valley	1949	9,441	9,754	19,195	10.7	60,289	3,373	1,585	32.9	654	30.1	9,988	18.2	96.6
		1948	7,785	12,014	19,799	9.1	52,635	2,942	1,463	34.0	744	31.9	11,930	18.2	98.6
	New York Central	1949	75,721	79,038	154,759	7.2	43,072	2,524	1,124	31.7	701	37.1	10,354	17.3	86.4
		1948	56,661	102,884	159,545	4.1	40,283	2,603	1,231	33.5	838	39.7	12,603	15.7	94.8
	New York, Chic. & St. L.	1949	5,556	8,463	14,019	4.3	57,374	2,815	1,153	27.5	1,384	80.3	12,191	20.7	106.6
		1948	2,873	12,443	15,316	1.9	51,593	2,676	1,193	28.7	1,483	75.4	14,396	19.4	130.9
	Pitts. & Lake Erie	1949	6,786	9,226	16,012	11.5	55,197	3,637	2,249	52.7	390	10.6	28,797	15.2	63.0
		1948	3,867	10,856	14,723	8.6	57,156	4,132	2,542	52.0	496	13.7	35,301	13.8	73.9
	Wabash	1949	8,960	10,317	19,277	3.4	49,473	2,343	958	26.6	863	48.8	6,869	21.3	91.4
		1948	5,860	14,181	20,041	3.6	47,105	2,350	1,045	28.4	1,080	53.9	8,988	20.2	110.8
Central Eastern Region	Baltimore & Ohio	1949	62,159	39,261	101,420	10.6	36,437	2,831	1,404	38.3	810	34.8	13,820	13.1	78.9
		1948	45,537	47,728	93,265	6.8	33,824	2,743	1,388	37.8	992	41.0	14,869	12.6	82.9
	Central of New Jersey*	1949	1,239	8,579	9,818	6.7	41,347	3,034	1,546	38.5	346	14.3	7,983	14.1	85.7
		1948	761	9,355	10,116	5.0	41,876	3,168	1,668	39.6	418	15.9	10,155	13.7	73.8
	Central of Pennsylvania	1949	1,796	3,138	4,934	11.5	39,383	3,018	1,582	39.6	678	27.1	16,381	14.1	68.2
		1948	970	3,969	4,939	9.8	42,368	3,116	1,718	40.6	865	30.7	19,882	14.3	76.4
	Chicago & Eastern Ill	1949	3,082	3,038	6,120	9.2	41,614	2,377	1,107	30.2	688	33.3	4,821	17.5	71.4
		1948	1,699	4,164	5,863	5.4	40,501	2,307	1,174	35.1	1,104	46.2	7,439	18.0	91.3
	Elgin, Joliet & Eastern	1949	7,182	9,572	16,754	3.0	22,963	3,015	1,651	42.6	280	9.9	19,941	8.0	93.8
		1948	6,539	11,324	17,863	1.6	18,521	2,808	1,555	43.1	325	11.1	14,200	6.9	119.0
	Pennsylvania System	1949	141,902	89,223	231,125	10.3	44,804	3,139	1,497	35.5	633	29.2	14,931	14.7	73.4
		1948	112,072	127,503	239,575	9.2	40,400	3,076	1,542	36.5	786	33.4	18,879	13.6	83.0
	Reading	1949	14,655	15,923	30,578	6.7	38,692	2,928	1,575	42.9	639	23.8	15,199	13.2	68.3
		1948	8,992	19,946	28,938	6.0	36,181	2,878	1,592	43.1	813	29.0	17,759	12.6	78.6
	Western Maryland	1949	6,783	2,625	9,408	1.4	40,891	3,020	1,631	45.4	1,075	39.7	11,466	13.7	50.6
		1948	3,696	3,555	7,251	1.6	32,358	2,994	1,648	45.2	1,498	53.3	13,643	11.0	62.4
Pocahontas Region	Chesapeake & Ohio	1949	63,501	23,437	86,938	4.1	64,965	3,898	2,164	48.4	1,224	45.0	21,250	16.8	86.1
		1948	43,691	29,916	73,607	2.4	56,839	3,904	2,208	48.1	1,584	56.0	24,290	14.8	98.5
	Norfolk & Western	1949	37,946	7,054	45,000	4.4	70,291	4,297	2,342	49.8	1,349	48.8	27,345	16.6	93.7
		1948	24,144	7,092	31,236	2.9	66,995	4,225	2,372	50.3	2,062	69.8	33,359	16.2	116.2
Southern Region	Atlantic Coast Line	1949	13,491	13,868	27,359	5.0	29,755	1,755	730	29.0	751	43.9	3,753	17.0	69.3
		1948	9,155	20,572	29,727	5.2	28,637	1,809	797	29.5	903	48.3	5,011	15.9	89.7
	Central of Georgia	1949	3,532	4,325	7,857	7.7	29,910	1,671	770	29.7	827	39.6	3,524	18.0	80.5
		1948	2,213	7,077	9,290	4.3	31,050	1,686	822	32.1	1,026	44.5	4,847	18.5	108.3
	Gulf, Mobile & Ohio	1949	4,167	8,421	12,588	2.7	58,195†	3,052	1,468	31.5	1,120	49.4	5,045	19.1	96.4
		1948	2,972	12,083	15,055	1.9	57,241	3,149	1,560	32.4	1,178	49.9	6,383	18.3	71.4
	Illinois Central	1949	24,641	23,457	48,098	2.4	46,374	2,494	1,133	32.5	1,018	51.8	7,705	18.8	74.8
		1948	17,104	34,910	52,014	1.9	45,290	2,610	1,252	33.7	1,136	52.2	9,066	17.6	80.5
	Louisville & Nashville	1949	38,783	11,128	49,911	3.6	33,753	2,056	1,015	37.2	833	37.4	8,895	16.5	103.2
		1948	27,379	16,242	43,621	4.2	29,814	1,945	984	37.8	1,198	51.1	11,044	15.3	130.0
	Nash., Chatt. & St. Louis	1949	3,183	3,431	6,614	12.3	35,957	1,758	801	29.0	877	42.6	5,624	20.6	110.0
		1948	1,111	4,710	5,821	7.1	29,886	1,523	756	32.2	1,108	45.6	6,392	19.8	110.1
	Seaboard Air Line	1949	11,282	10,382	21,664	2.3	38,147	2,132	873	29.3	925	52.5	5,066	18.3	93.0
		1948	6,686	17,066	23,752	1.3	35,778	2,092	912	29.5	1,067	55.7	6,356	17.6	103.7
	Southern	1949	18,448	26,240	44,688	5.0	33,454	1,885	812	28.3	738	40.4	5,224	17.9	70.2
		1948	14,036	31,784	45,820	4.5	30,318	1,770	806	29.6	978	48.4	6,846	17.3	89.1
Northwestern Region	Chicago & North Western	1949	23,384	24,735	48,119	3.1	37,194	2,432	1,056	30.5	584	29.7	3,453	16.0	67.4
		1948	19,745	33,808	53,553	3.6	35,520	2,476	1,131	31.0	671	32.2	4,429	15.1	80.8
	Chicago Great Western	1949	2,034	4,706	6,740	7.7	53,440	3,273	1,403	28.6	1,004	53.8	4,958	16.3	88.7
		1948	1,502	4,787	6,289	3.8	46,946	2,789	1,258	29.6	1,362	66.4	5,938	16.3	99.4
	Chic., Milw., St. P. & Pac.	1949	32,521	27,474	59,995	1.9	39,089	2,363	1,062	30.7	727	36.4	3,977	16.6	78.5
		1948	23,081	34,801	57,882	2.1	36,740	2,271	1,056	31.4	774	36.8	4,261	16.3	83.6
	Chic., St. P., Minn. & Omaha	1949	1,032	5,766	6,798	5.3	24,226	1,758	772	28.2	588	29.4	2,528	13.9	55.9
		1948	1,124	7,303	8,427	6.5	24,549	1,852	838	29.9	646	30.5	3,282	13.7	71.3
	Duluth, Missabe & Iron Range	1948	14,884	492	15,376	4.0	91,070	5,665	3,412	60.3	1,098	35.7	29,110	16.7	153.0
		1948	14,591	491	15,082	3.4	88,570	5,266	3,156	55.7	1,093	38.1	28,818	17.3	137.4
	Great Northern	1949	24,745	15,635	40,380	3.2	52,205	3,173	1,597	37.1	1,148	47.1	5,791	16.5	74.5
		1948	22,591	19,739	42,330	3.3	47,886	3,005	1,504	36.5	1,113	46.2	5,597	16.0	73.8
	Minneap., St.P. & S. Ste. M.	1949	7,801	6,060	13,861	7.0	37,910	2,092	978	31.4	882	42.8	2,926	18.2	106.0
		1948	7,095	9,166	16,261	7.9	36,305	2,104	1,019	31.7	811	36.7	3,226	17.4	105.9
	Northern Pacific	1949	21,149	12,573	33,722	6.8	46,517	2,735	1,286	32.2	945	42.4	4,890	17.1	74.0
		1948	18,294	17,326	35,620	5.0	46,069	2,654	1,280	32.2	902	39.4	4,731	17.5	70.6
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1949	55,220	33,673	88,893	4.0	54,405	2,666	1,046	26.7	1,018	58.2	6,722	20.5	107.8
		1948	47,232	37,431	84,663	5.4	50,692	2,533	1,011	27.0	1,189	67.3	7,518	20.1	119.9
	Chic., Burl. & Quincy	1949	20,014	21,804	41,818	4.8	51,770	2,778	1,274	31.9	1,094	52.7	5,180	18.7	72.2
		1948	15,699	24,504	40,203	4.3	51,058	2,887	1,330	32.4	1,278	61.7	6,152	17.8	82.4
	Chic., Rock I. & Pac.	1949	14,046	21,627	35,673	4.7	41,678	2,292	985	30.0	953	52.1	4,488	18.3	103.5
		1948	11,415	26,970	38,385	4.7	40,977	2,260	969	30.5	1,037	57.0	5,010	18.2	113.3
	Denver & R. G. Wn.	1949	8,622	4,460	13,082	4.7	42,499	2,405	1,193	33.1	1,056	43.2	5,575	17.9	72.7
		1948	7,647	6,075	13,722	5.0	39,799	2,388	1,202	34.0	1,023	41.0	5,903	16.9	72.2
	Southern Pacific	1949	27,244	41,407	68,651	4.6	47,379	2,856	1,046	26.3	1,105	72.2	9,062	16.8	103.2
		1948	25,106	46,517	71,623	3.5	47,050	2,857	1,123	27.8	1,162	67.8	9,710	16.7	107.9
	Union Pacific	1949	30,372	28,423	58,795	4.6	64,709	2,941	1,133	26.0	1,253	74.3	7,647	22.3	93.5
		1948	28,641	29,774	58,415	4.0	63,068	2,979	1,242	28.6	1,371	72.8	8,183	21.3	97.5
	Western Pacific	1949	2,262	2,134	4,396	12.2	55,320	2,773	1,306	29.8	2,029	89.8	7,840	20.1	73.8
		1948	2,258	3,255	5,513	7.6	55,721	2,672	1,273	29.8	1,663	73.2	7,757	21.0	72.4
Southwestern Region	International-Gt. Northern*	1949	765	5,971	6,736	1.2	42,327	2,203	992	32.6	955	45.0	6,159	19.5	96.9
		1948	495	6,208	6,703	1.6	36,126	1,937	884	31.9	906	43.0	5,994	18.8	103.3
	Kansas City Southern	1949	1,590	5,583	7,173	4.3	66,120	3,381	1,574	33.0	1,164	54.8	10,062	19.6	119.1
		1948	1,199	5,818	7,017	3.4	69,054	3,401	1,584	32.1	1,306	61.9	10,183	20.3	111.2
	Mo.-Kans.-Texas Lines	1949	5,162	7,923	13,085	3.6	40,154	2,154	936	30.0	1,050	56.8	4,076	18.9	98.5
		1948	3,318	8,631	11,949	1.0	41,696	2,205	943	29.0	1,359	76.4	4,749	19.0	116.4
	Missouri Pacific*	1949	20,431	17,301	37,732	2.3	47,909	2,376	1,007	29.5	1,146	62.6	6,054	20.3	101.8
		1948	18,025	22,815	40,840	1.9	45,076	2,360	1,029	30.6	1,219	63.9	7,092	19.2	111.6
	Texas & Pacific	1949	2,137	5,406	7,543	4.8	51,837	2,373	937	27.0	1,306	76.5	5,492	22.0	93.8
		1948	1,574	8,174	9,748	3.4	44,116	2,233	915	29.4	1,633	92.3	8,578	19.9	147.4
	St. Louis-San Francisco	1949	13,392	10,576	23,968	3.0	38,803	2,133	933	30.3	857	44.6	4,365	18.2	70.9
		1948	8,867	14,339	23,206	2.6	35,319	1,741	753	30.0	1,046	55.5	4,876	20.4	99.2
	St. Louis Southw. Lines	1949	2,039	4,670	6,709	2.5	46,392	2,429	1,086	27.8	1,816	96.2	7,645	19.1	111.6
		1948	1,621	5,907	7,528	2.3	48,657	2,496	1,116	28.0	1,930	98.0	9,093	19.5	130.8
	Texas & New Orleans	1949	4,725	17,165	21,890	3.1	40,367	2,114	888	29.1	1,055	57.3	5,158	19.3	108.8
		1948	4,118	16,741	20,859	3.0	36,891	1,888	838	30.1	1,207	59.3	5,951	19.7	134.7

*Report of trustee or trustees.
†The G. M. & O.'s gross ton-miles per train-hour for April, 1949, 57,463, were incorrectly reported in the *Railway Age* of July 16, page 75, as 37,463.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

More Study Urged

(Continued from page 75)

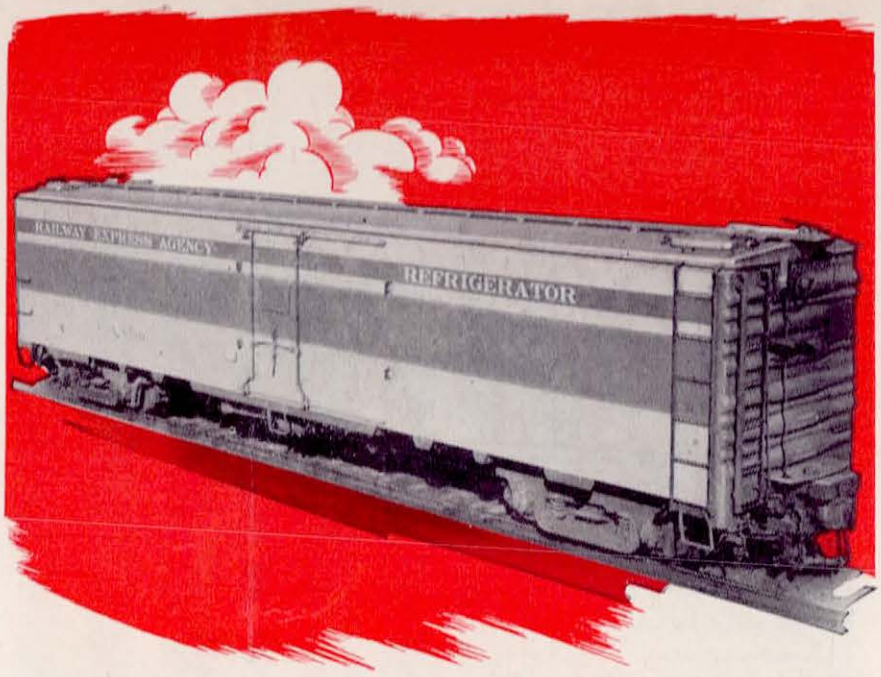
tions from Mr. Sullivan, Mr. Patterson denied that enactment of the bill's original version would put the I.C.C. "into the business of running the railroads."

Representative Beckworth, Democrat of Texas, who was chairman of the subcommittee which proposed the toned-down version, questioned Commissioner Patterson with respect to testimony the latter gave before the subcommittee to the effect that operating rules are not now enforced on some railroads. The commissioner recalled the testimony, and said it was his view that better observance would result if the carriers were required to file their operating rules, because they would then know that there was a "policeman" on hand. As to Mr. Patterson's contention that the limited rules authority would not apply on about half of the mileage, Mr. Beckworth suggested that train-operating rules "in connection with" telegraph and telephone installations might be prescribed for non-signaled lines where the telegraph and telephone are used. Mr. Patterson hadn't thought the rules provisions would apply to such lines, but he conceded that all mileage would be covered if they did.

No Penalty for Employee Rule Violators

Noting that the bill provides for the imposition of fines on railroads for failure to observe rules, Representative O'Hara, Republican of Minnesota, asked Mr. Patterson if that provision should be extended to employees. The commissioner did not answer directly, but referred to that part of his testimony before the subcommittee which included statements to the effect that "laxity of observance" usually results from "laxity of enforcement"—an employee "usually does what the boss wants." Mr. O'Hara then asked if the commissioner believed that there is a "flagrant practice" on the part of the railroads to violate rules or permit violations. Mr. Patterson replied in the negative, adding that the railroads as a whole and "many individual roads" have "adequate" rules for safe operation.

Representative Hale, Republican of Maine, then took up the questioning, asking first if the foregoing answer meant that some roads do not have safe rules. Mr. Patterson replied that commission investigations have disclosed cases where rules are not adequate for safe operation. Mr. Hale then wanted to know if the commission did anything in such cases. Mr. Patterson told him that it could only use its "moral influence" since it lacks power over rules. Representative Harris, Democrat of Arkansas, was the next questioner, and the replies he received from Mr. Patterson prompted him to observe that the commissioner was contending that the commission "should have complete control over operations of the railroad industry."



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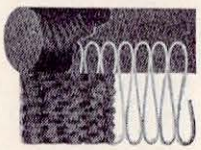

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Mr. Patterson said he'd agree with that statement if it were modified to say "complete control over safety of operations."

Representative Rogers, Democrat of Florida, asked if the commission would have any financial responsibility for injuries or damages resulting from an accident caused by operations under a "bad" rule it had prescribed. Mr. Patterson replied that the commission would be in the same position that it now is with respect to existing safety laws. And Chairman Crosser broke in to observe that "some prosecutors have sent men wrongfully to their deaths, but that wouldn't be a good reason to abolish prosecutors."

By persistent questioning which called for specific evidence in support of the charge that some roads do not now have adequate rules for safe operation, Representative Heselton, Republican of Massachusetts, drew from Mr. Patterson an admission that the commissioner's earlier statement that "10 per cent" were in that class was "arbitrary." It might only be "one per cent" or "one-half of one per cent," the commissioner said.

Mr. Heselton's first questions asked whether the "10 per cent" meant that 10 per cent of the roads had unsafe operating rules or 10 per cent of the mileage of the industry as a whole. Mr. Patterson said that he didn't mean either when he used the "arbitrary" figure of 10 per cent, but if he had to construe it, he would say 10 per cent of the mileage. Then followed the congressman's questions which led up to the admission that the mileage involved might only be "one-half of one per cent." The admission came as Mr. Heselton insisted on having furnished at least one instance of an inadequate "current" operating rule. Mr. Patterson said that such information could not be furnished as to current rules because the "inadequacy" of rules is revealed only after an accident. Mr. Heselton then asked if it would be "fair" to say that "so far as you know there is no carrier with unsafe rules." Mr. Patterson's reply was that "our experience is different."

Messrs. Hale and Heselton indicated by other questions that, while the commission now does not have statutory authority to prescribe operating rules for individual roads, it could inform itself as to what rules are in effect and how they compare with the so-called standard code recommended by the A.A.R. and then, where it considers such action required, could "advise" any railroad that its rules are in its opinion not all as "rigorous" as they should be. Commissioner Patterson agreed that the commission could examine the rules in effect on the various roads, but he insisted that after they were reviewed by the commission it "couldn't do anything about it," under the present law, if it thought a change in rules desirable in the interest of safety.

Representative Wolverton again took up the questioning, asking particularly what existing conditions, in Commissioner Patterson's opinion, require a law as

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broad in its application as that proposed. The reply was to the effect that a reduction in the number of train accidents and fatalities could be brought about if the commission had authority to "police" railroad operating rules. After a discussion of some specific rules which Mr. Patterson described as "deficient," Mr. Wolverton remarked that examination of a group of reports of accident investigations led him to the conclusion that many railroad accidents were the result, not of improper rules, but of failure to observe the rules in effect. He then brought up again the question whether there should be any provision in the bill to subject an employee to a fine or other penalty for failure to obey a rule, to which Mr. Patterson replied that the carriers were held responsible since it is their obligation to enforce the rules. Under further questioning he said that it might be proper to provide penalties to apply to an employee who "knowingly" violates a rule. In concluding, the commissioner said that it might be desirable, in the light of the testimony and the views of the commission's majority, to deal with the proposed safety legislation "in two bites," leaving the extension of the commission's authority to the wider field of railroad operations to a separate bill for further consideration.

The only other member of the commission to appear before the committee was Commissioner Johnson. He said that he was in "full agreement" with the position taken by the commission majority and stated by Dr. Splawn. "General safety" is a "very extensive" subject which should not be treated as a "by-product" of signaling and communications, Colonel Johnson continued, adding that it would be "entitled to a separate section and many, many paragraphs." The original version of the bill, in his opinion, would require the commission to "scrutinize every mile" of railroad and to establish for that purpose a bureau "bigger than any it now has." In closing his brief statement Colonel Johnson warned that a Congress which passes the unrestricted bill should be prepared to make "some additional appropriations which wouldn't be small."

In questioning Colonel Johnson, Mr. Wolverton expressed concern because testimony indicated an "underlying fear" that the bill could be interpreted as giving the commission authority to take over the managerial function to an extent that might be "disastrous," and certainly would entail great expense. He asked who prepared the bill which contained what Colonel Johnson had just called "a few inconspicuous words" that were being interpreted as giving the commission this wide authority. Commissioner Patterson explained that the bill had been prepared in his office, by him and members of his staff, in consultation with others, and had been introduced in the previous Congress for the commission by Mr. Wolverton, then chairman of the committee. It was reintroduced in the present Congress in identical language by the committee's present chairman.

Bill "Not Ripe for Action"

The hearings concluded with a brief statement by Mr. Fort, the tenor of which has already been indicated. All the testimony had shown, he said, that the proposed legislation is "not ripe for action." The original bill, he declared, was not drawn in a straightforward, candid manner, and even Dr. Splawn, chairman of the commission's legislative committee, had confessed he did not know the extent of the commission's authority over railroad operations under the bill, even as amended. The proponents of the measure, said the A.A.R. vice-president, "have not made a case" in their testimony to the committee.

The railroads have attained a new all-time peak in the safety of their train operations, said Mr. Fort, and under such circumstances he questioned the necessity of "rushing in, ill prepared," to legislate about a matter that might have such far-reaching consequences.

Selected Income and Balance-Sheet Items of Class I Steam Railways

Compiled from 128 reports (Form 1BS) representing 132 steam railways.
(SWITCHING AND TERMINAL COMPANIES NOT INCLUDED)

Income Items	United States: For the month of April 1949	For the month of April 1948	For the four months of 1949	For the four months of 1948
1. Net railway operating income	$64,763,030	$53,104,074	$193,178,916	$195,750,651
2. Other income	15,932,521	16,381,775	66,393,712	73,409,512
3. Total income	80,695,551	69,485,849	259,572,628	269,160,163
4. Miscellaneous deductions from income	3,271,650	3,664,123	13,110,130	14,867,008
5. Income available for fixed charges	77,423,901	65,821,726	246,462,498	254,293,155
6. Fixed charges:				
6-01. Rent for leased roads and equipment	9,417,613	10,853,542	36,788,540	42,047,108
6-02. Interest deductions [1]	24,851,973	24,348,617	98,592,731	97,147,654
6-03. Other deductions	193,462	142,712	742,849	567,903
6-04. Total fixed charges	34,463,048	35,344,871	136,124,120	139,762,665
7. Income after fixed charges	42,960,853	30,476,855	110,338,378	114,530,490
8. Other deductions	2,971,984	3,211,368	12,286,945	12,716,755
9. Net income	39,988,869	27,265,487	98,051,433	101,813,735
10. Depreciation (Way and structures and Equipment)	33,137,131	30,773,529	131,683,350	121,536,069
11. Amortization of defense projects	1,374,616	1,366,669	5,480,883	5,790,349
12. Federal income taxes	25,478,684	20,205,989	87,241,737	91,543,591
13. Dividend appropriations:				
13-01. On common stock	2,968,177	2,956,177	49,340,419	42,344,427
13-02. On preferred stock	529,233	1,204,088	23,066,837	19,170,481
Ratio of income to fixed charges (Item 5 ÷ 6-04)	2.25	1.86	1.81	1.82

Selected Expenditure and Asset Items	United States: Balance at the end of April 1949	Balance at the end of April 1948
17. Expenditures (gross) for additions and betterments—Road	$100,346,582	$89,815,272
18. Expenditures (gross) for additions and betterments—Equipment	369,072,935	275,018,015
19. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	517,760,986	542,284,774
20. Other unadjusted debits	133,078,463	159,771,749
21. Cash	807,990,327	798,701,970
22. Temporary cash investments	908,490,597	923,269,391
23. Special deposits	125,156,196	137,416,841
24. Loans and bills receivable	773,485	12,632,546
25. Traffic and car-service balances—Dr.	54,354,494	50,079,667
26. Net balance receivable from agents and conductors	116,492,642	122,015,902
27. Miscellaneous accounts receivable	300,127,701	348,904,286
28. Materials and supplies	885,399,186	801,886,556
29. Interest and dividends receivable	13,614,029	18,250,329
30. Accrued accounts receivable	144,371,810	165,297,550
31. Other current assets	38,750,770	40,427,833
32. Total current assets (items 21 to 31)	3,395,521,237	3,418,882,871

Selected Liability Items	1949	1948
40. Funded debt maturing within 6 months [2]	$165,027,192	$160,041,077
41. Loans and bills payable [3]	3,159,150	3,175,000
42. Traffic and car-service balances—Cr.	76,170,655	85,055,741
43. Audited accounts and wages payable	516,388,866	489,873,976
44. Miscellaneous accounts payable	222,008,331	232,862,764
45. Interest matured unpaid	48,288,707	46,738,288
46. Dividends matured unpaid	4,087,984	4,859,677
47. Unmatured interest accrued	63,438,782	60,320,647
48. Unmatured dividends declared	27,234,156	18,317,468
49. Accrued accounts payable	197,203,515	193,939,588
50. Taxes accrued	750,874,519	688,738,785
51. Other current liabilities	73,029,224	91,498,035
52. Total current liabilities (items 41 to 51)	1,981,883,889	1,915,379,969
53. Analysis of taxes accrued		
53-01. U. S. Government taxes	616,896,833	563,866,112
53-02. Other than U. S. Government taxes	133,977,686	124,872,673
54. Other unadjusted credits	272,255,675	306,260,529

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which becomes due within six months after close of month of report.
[3] Includes obligations which mature not more than one year after date of issue.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Current Publications

MAP

Railroad Map of Chicago, 16¼ in. by 19¼ in. Published by Kalmbach Publishing Co., 1027 North Seventh st., Milwaukee 3, Wis. $1.

The maze of trackage that comprises the Chicago Switching District, and the territory immediately surrounding it, stands out in relative simplicity on this four-colored map, scaled one-half mile to the inch. Principal yards and interchanges are indicated. On the reverse side is a 4⅝-in. by 7⅞-in. detailed map of the Loop district, showing principal passenger stations. The map is printed on heavy paper, suitable for desk or wall use.

FILM

You and Your Railroads. 16-mm., sound, color, 19 min. Produced by Association of American Railroads, Transportation bldg., Washington 6, D. C. One print available without cost to each railroad in position to make active use of it; additional prints $107.90 each.

Designed for showing to business, professional and civic organizations, railroad employee groups and students at or above the high school level, this new film deals in plain and simple terms with some of the basic elements of railroad economics and discusses the railroad business as it relates to the everyday life and affairs of the public generally, to industry and agriculture, and to our whole national economy. (See *Railway Age* of May 28, page 48.)

PAMPHLETS

Milton Hannibal Smith—His Life and Achievements. Reprint of an address by James J. Donohue, general attorney, Louisville & Nashville, before the Filson Club, Louisville, Ky. 16 *pages. Published by Mr. Donohue,* 908 *West Broadway, Louisville 1.* 10 *cents.*

Mr. Donohue, the only officer of the L. & N. now in service "who had the privilege of serving through 35 of the 39 years of Mr. Smith's tenure as chief executive officer" of that company, reviews in his address the career and accomplishments of one of America's greatest railroad executives. His talk, and the personal reminiscences which it contains, are of special interest because there is comparatively little other material available concerning Mr. Smith and his share in building America's present-day rail transportation system.

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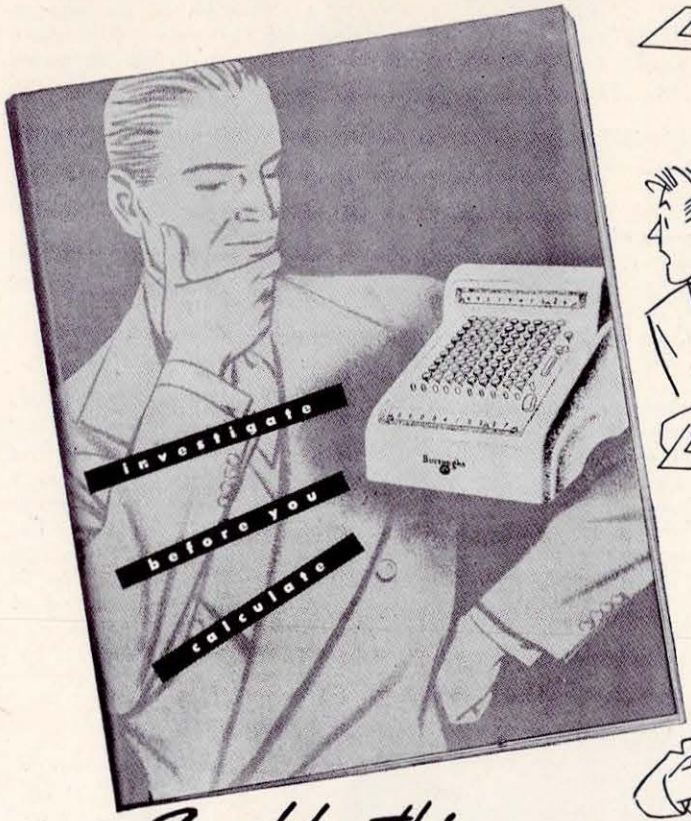

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stations. Diagrams show restoration of rail bridges and viaducts from 1944 through 1948, freight traffic organization in the Paris region, present and future signaling and electrification installations, passenger and freight traffic in 1938 and 1944-1948 and rebuilding of locomotives and rolling stock.

Transportation Developments in the Republic of the Philippines in 1948, by E. D. Hester. 4 pages. Issued by the Office of International Trade, United States Department of Commerce. Available from the Government Printing Office, Washington 25, D. C. 5 cents.

Covers developments in highway, railroad and air transportation and shipping.

Canada Produces, prepared by the Canadian Foreign Trade Service, Department of Trade and Commerce. 48 pages, illustrations, charts. Available upon request on business letterhead from the Canadian Trade Commissioner, Room 406, 620 Fifth ave., New York 20.

As a means of developing an interest in Canadian production capacity and of encouraging international understanding, the Canadian Trade Commissioner is distributing this booklet which covers manufacturing, agriculture, forestry, mining, construction, transportation, electric power, fisheries and the fur industry. Copious illustrations show, and a brief paragraph describes, the activities in each industry.

The Railways of Germany During the Period 1939-1945, by H. Holcroft. 72 pages, illustrations. Published for the British Intelligence Objectives Sub-Committee by His Majesty's Stationery Office. Available from the British Information Services, 30 Rockefeller Plaza, New York 20. $1.

This publication is a documentary report made by field teams on visits in Germany covering civil, mechanical and electrical engineering practices on the German railways during the war period. The report, say the compilers, corrects any impressions which may have been held that the Nazi government tended to neglect the railways in order to develop the autobahn (superhighways). However, they point out that departures from pre-war standards were more toward meeting shortages of material and skilled labor than concerned with technical progress. A number of plates and diagrams augment the text in describing wartime engineering standards on the German state railways.

Trends, 1949. 49 pages. Published by the American Trucking Associations, Inc., 1424 16th st., N.W., Washington 6, D. C. Free.

Contains data on trends in truck registrations, tonnage and ton-miles, taxes, wages, employment, average load, average haul, and many other significant factors concerning motor carrier operations. Much of the information is taken from official annual reports of the 2,400 Class I motor carriers—those with anual gross revenues of $100,000 or more— to the Interstate Commerce Commission. Regional breakdowns of this information make it possible to see at a glance the great difference in truck operating characteristics in different parts of the country. Bar charts accompany most of the data.

Applications of Electricity to Railways, 1948. Prepared by Edmund A. Freeman. 39 pages. Published by the Library, Bureau of Railway Economics, Association of American Railroads, Transportation Building. Washington 6, D. C. Free.

A bibliography of periodical articles on railroad electrification, Diesel-electric and electric locomotives, and electrical apparatus and equipment appearing in a select list of periodicals. An appendix contains bibliographies on communications and signaling.

History of Colorado Railroads, by Herbert O. Brayer, State Archivist, State Museum, Denver, Colo.

Originally issued as Chapter XXIV of "Colorado and Its People," this chapter, dealing with the railroads of Colorado, has been reprinted as a separate pamphlet.

PERIODICAL ARTICLE

Railroads in the United States, by Robert S. Henry. Transport and Communications Review April-June, 1949, pp. 16-31. Published by the Transport and Communications Division, Department of Economic Affairs, United Nations. Available from International Documents Service, Columbia University Press, 2960 Broadway, New York 27. 50 cents.

Col. Henry presents a short, concise outline of United States railroads and their operations. He covers mileage, gage, consolidation, regulation, organization, wages and working conditions, freight and passenger traffic, rates and fares, equipment, safety, operating efficiency, research, and financial results. Anyone interested in a bird's-eye view of American railroads will find his article most helpful.

BOOKS

Modern Railroad Structures, by C. P. Disney and R. F. Legget, 213 pages, illustrations, drawings. Published by the McGraw-Hill Book Company, 330 W. 42nd st., New York 18. $5.

Here is an illustrated record of some of the recent advances in the design and construction of some of the more important types of structures required for railroads. Through the use of many illustrations, the authors present ideas for new structures which can be adapted to local problems in the construction and maintenance of railway lines. Several chapters are devoted to bridge construction and one to turntable design. The importance of soil mechanics in railroad engineering is stressed, modern methods of treating railroad track are described, and recent improvements in the art of grouting and repairing concrete and masonry work are fully covered.

A Study of the Port of New York Authority, by Frederick L. Bird. 191 pages, illustrations. Published by Dun & Brad-

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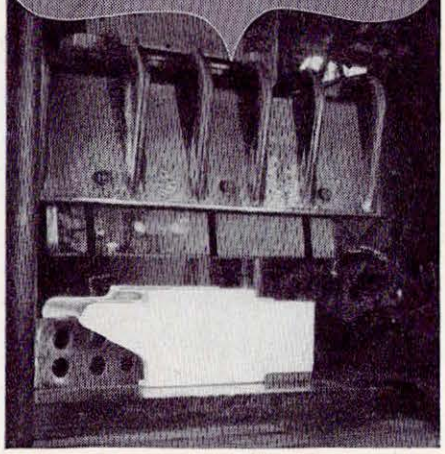

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Since the Port Authority is the prototype of public authorities in the United States, is dealing with problems of regional government which are likewise the concern of planners and administrators in other metropolitan areas, and has developed special technical and financial procedures, it receives innumerable inquiries regarding its operations and plans. This widespread interest has emphasized the desirability of an independent study and appraisal of the authority's work that would include its postwar program. Dr. Bird, who is Dun & Bradstreet's director of municipal research, discusses the origin and purpose of the authority; its accomplishments and plans; powers, jurisdiction and management; financing; motor truck and bus terminals; marine terminals and waterfront development, and air terminal development program.

Transport and Communications Review, Vol. II, No. 1, January-March, 1949. Published by the Transport and Communications Division, Department of Economic Affairs, United Nations. Available from the International Documents Service, Columbia University Press, 2960 Broadway, New York 72. Single copies, 50 cents.

Contains several articles of interest to railroad people, on the Berne Conventions and the Central Office for International Railway Transport; the new freight rates of the French National Railways; the transport situation in Poland; and railway traffic statistics, 1937, 1947, 1948. This latter article is composed primarily of two tables; one containing comparative freight traffic statistics for 37 countries for which complete figures were available, and the other containing similar statistics for a number of additional countries for which complete statistics were not available. Any one interested in foreign railway statistics will be particularly interested in the accompanying appendix which contains the sources for these figures.

TRADE PUBLICATIONS

Steel Making in America, by Douglas A. Fisher. 101 pages, illustrations. Published by the United States Steel Corporation, 71 Broadway, New York 6.

Describes, in simple terms, the manufacture of steel in the United States from raw materials through finished steel products ready for shipment from the mills. A brief history of the iron and steel industry from earliest times to the present is also included. This booklet was prepared and published primarily for school students in response to thousands of requests received from pupils for information about steel making, but it will be of interest also to adult laymen who desire to further their knowledge of the manufacture of steel.

Portable Conveyors. 36 pages, illustrations. Published by the J. C. Corrigan Company, 41 Norwood st., Boston 22, Mass.

Contains illustrations and specifications of a complete line of power-driven conveyors for handling bags, boxes, crates and cartons at railroad terminals.

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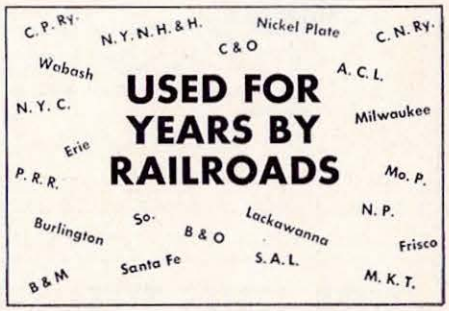

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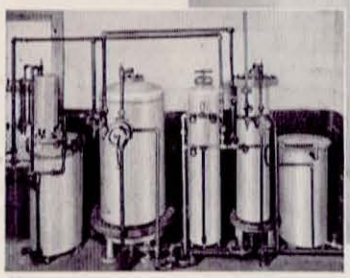

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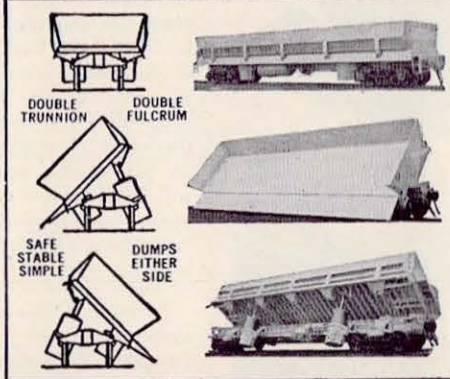

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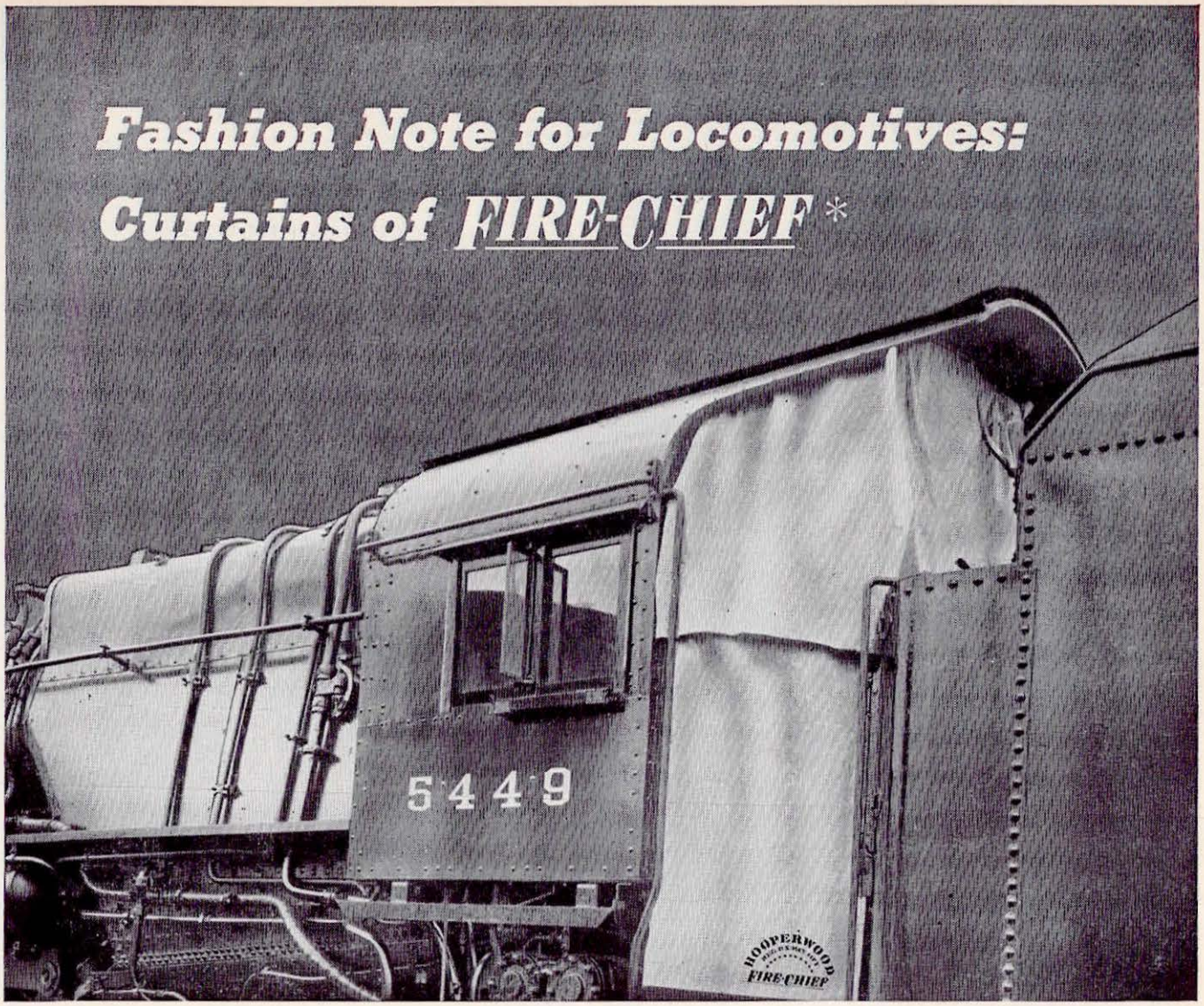

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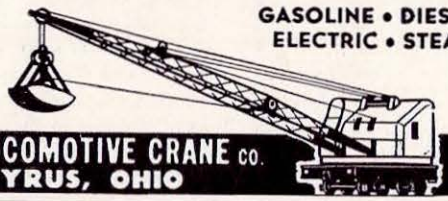

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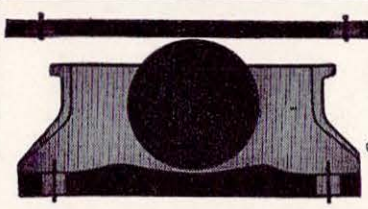

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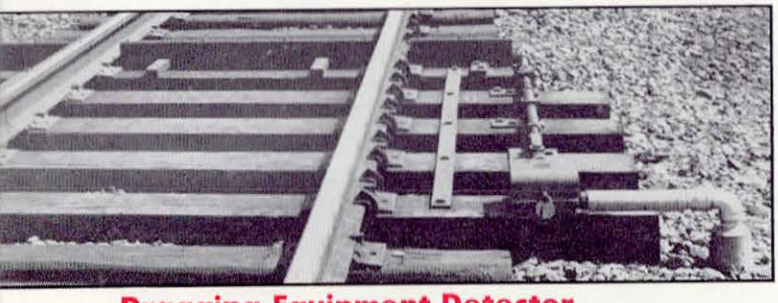
G-R-S AUTOMATIC BLOCK SIGNALING CAN CUT YOUR OPERATING COSTS

Automatic signaling gives enginemen the confidence essential to efficient operation.

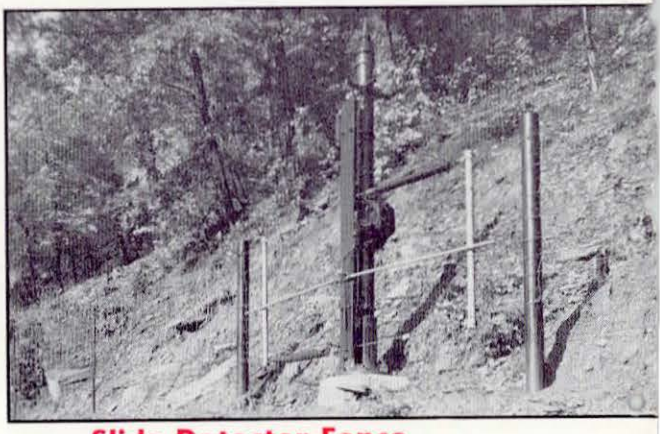
Automatically informed of track conditions for one or more blocks ahead, the engineman can take blind curves at maximum permissible speed. He can approach grades with enough speed to avoid stalling. Block signaling checks switches and derails. It can also be arranged to warn of dragging equipment, slides, high water, and fire conditions in bridges and tunnels.

Thus automatic signaling gives the engineman more mental freedom to concentrate on efficient train operation. You get the resultant advantages of lower operating costs.



Dragging Equipment Detector

When a train with dragging equipment passes over this device, the signals are set at STOP. Ask for descriptive literature D59.6101.



Slide Detector Fence

Slides of rock, snow, etc., striking this fence, set the signals at STOP. Ask for Bulletin 168.

Motor Car Indicator Lamp

This lamp warns rail motor cars of approaching trains. Ask for descriptive literature D50.0301.

If you want to cut costs, to step up operating efficiency, it will pay you to see what automatic block signaling can do on your road. Ask your G-R-S representative to help you make a study of the results you can expect from automatic block signaling.

GENERAL RAILWAY SIGNAL COMPANY

New York 17 Chicago 3 ROCHESTER 2, N.Y. St. Louis 1

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